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# TWENTY-SECOND ANNUAL REPORT

OF THE

# STATE DEPARTMENT OF HEALTH

OF

# NEW YORK

FOR THE YEAR ENDING DECEMBER 31, 1901

TRANSMITTED TO THE LEGISLATURE FEBRUARY 20, 1902

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# STATE OF NEW YORK

No. 58

# IN ASSEMBLY

FEBRUARY 20, 1902

## TWENTY-SECOND ANNUAL REPORT

OF THE

## STATE DEPARTMENT OF HEALTH

STATE OF NEW YORK

EXECUTIVE CHAMBER

ALBANY, *February* 20, 1902

*To the Legislature:*

I have the honor to transmit herewith the twenty-second annual report of the State Department of Health, the same being for the year 1901, with appendices.

B. B. ODELL, JR.

# STATE DEPARTMENT OF HEALTH OF NEW YORK

**OFFICERS**

DANIEL LEWIS, M. D. ..... *Commissioner of health*

WILLIAM E. JOHNSON, M. D. ..... *Secretary*

F. C. CURTIS, M. D. ..... *Medical expert*

T. A. STUART ..... *Chief clerk*

F. D. BEAGLE ..... *Registrar of vital statistics*

GEORGE BLUMER, M. D. ..... *Director Bureau of pathology and bacteriology*

WILLIS G. TUCKER, M. D. ..... *Director Bureau of chemistry*

ROSWELL PARK, M. D. ..... *Director Cancer laboratory*

HERBERT D. PEASE, M. D. ..... *Director Antitoxin laboratory*

OLIN H. LANDRETH, C. E. ..... *Consulting engineer*

P. A. CALLEN, M. D. ..... *Consulting opthalmologist*

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# REPORT

ALBANY, *February* 19, 1902

To His Excellency BENJAMIN B. ODELL, JR., *Governor of the State of New York:*

Sir—The following annual report for the year 1901 includes the portion of the year from January 1, 1901, to February 19, 1901, when the former State Board of Health was superseded by the present State Department of Health by chapter 29 of the laws of 1901.

The work of the Department is naturally arranged under the following heads:

1 The sanitary condition of the state.
2 Water supplies and drainage.
3 Investigation of alleged nuisances.
4 Investigations ordered by the governor.
5 Bureau of chemistry.
6 Bureau of pathology and bacteriology.
7 Bureau of vital statistics.
8 Antitoxin laboratory.
9 Cancer laboratory.
10 Conference of sanitary officers.
11 Examination of embalmers.
12 Barren island and Cheektowaga.
13 Recommendations.
14 Financial report.

## SANITARY CONDITION OF THE STATE

### THE PRINCIPAL CAUSES OF DEATH FOR THE YEAR

In addition to the 129,257 deaths for the year reported in the Monthly bulletin, there were 1500 delayed returns, making the death-rate 18 per 1000 population. The mortality was 7500 in excess of the average of the past five years, but the rate was the same as that of 1900. The sanitary districts all participate in the variations in mortality.

The *infant mortality* is unusually low, being 3500 less than in 1900 and 2500 less than the average of the past five years. This low rate prevailed throughout the state; it was unusually low in July, being less than in August and September. The *deaths at 70 years* and over were but one-third as many as those under five years in the maritime district; in the rest of the state they exceeded them by 4300, and constituted 27 per cent of the total.

The *zymotic mortality* was 14.5 per cent of the total, which is above the average. *Diarrhoeal diseases* were excessive in the maritime district, but below the average in the rest of the state. *Scarlet fever* caused double the average number of deaths. On the other hand, *diphtheria* caused 500 fewer deaths than the average and was decreased throughout the state. *Measles* decreased everywhere from the high rate of last year. *Typhoid fever* was less prevalent, the decrease being most marked in the Hudson and Mohawk valley districts.

*Smallpox*—After three months of freedom from smallpox, a fresh outbreak set in November, 1900, in the eastern part of the state; it was brought into the state by a troupe of traveling performers who exhibited at several places before it was

found that a case of the disease was among their number. Schenectady, Gloversville, Albany, and subsequently Glens Falls and Watertown, had extensive outbreaks from which smallpox spread to numerous other places. The effects of this importation lasted for several months. The disease was also brought into the state from Vermont to Cohoes, where there was a serious epidemic, and from other states to various places during the summer. There was an extensive prevalence of it in New York during May, June and July, and numerous places in the vicinity and some quite remote had cases contracted there. Buffalo, toward the end of the year, had a considerable epidemic, whence some spread to other places. In all there were 110 places in the state during the period from November, 1900, to the end of 1901 in which one or many cases occurred, there having been during that time 1100 cases with 19 deaths outside of New York city, and 1982 cases with 426 deaths in New York city and the maritime district. At the end of the year smallpox exists in 16 localities, in all of which there is but one case except at New York and Buffalo, where it is declining in prevalence; at Binghamton and Watertown, where there are several cases, and in lumber camps in the vicinity of Tupper lake in the Adirondacks, which region from its exposure to the province of Ontario, where it is widespread and from which our cases have come, is our present chief source of concern.

The *grippe* epidemic has this year caused 7000 deaths, against 11,500 in 1900, the average of 11 previous epidemics being 5500. There were 1600 fewer deaths than last year from acute respiratory diseases. About 70 per cent of the deaths reported from acute respiratory diseases were from pneumonia.

## WATER SUPPLIES AND DRAINAGE

In accordance with article 5, section 70, of the Public health law, the Department adopted and published rules for the protection of the watersheds from which the following municipalities secure their water for potable purposes:

1 The city of Kingston.

2 The village of Perry.

3 The village of Cornwall.

Complaints of the infringement of rules heretofore adopted by the State Board of Health were received and investigated, as follows:

1 Mount Kisco.

2 Plattsburg.

3 Canastota.

The detailed reports of these proceedings appear in the body of this report.

## SEWER SYSTEMS APPROVED

A very important part of the duties of the Department consists in the examination and approval of sewer plans.

All such plans from any village or town must be approved before their construction can be commenced.

During 1901 plans and specifications were presented and the approval clause affixed after having been approved by the consulting engineer of the Department, as follows:

1 Avon.

2 Brockport.

3 Depew.

*4 Oneida.*

5 Plattsburg (2 plans).

6 Sandy Hill.

7 St. Andrews-on-Hudson.

In all cases a scientific disposal of sewage has been required in the plans and the installing of such disposal works provided for at an early day.

The funds should be provided for inspection of these sewer systems during their construction and after completion by our engineer to insure strict compliance with the requirements of the Department. At present such supervision is impossible on account of the lack of money.

## INVESTIGATION OF ALLEGED NUISANCES

Among the large number of complaints of alleged nuisances, many have been settled through correspondence and the cooperation of local health officers.

Twenty-one complaints were specially investigated by Dr Wm. E. Johnson, secretary of the Department, and Prof. Olin H. Landreth, consulting engineer.

These 21 investigations were from the following localities:

1 Burdett.

2 Waverly.

3 Tuxedo.

4 Elmira Heights.

5 Thousand Island Park.

6 Moravia.

7 Mamaroneck.

8 White Plains.

9 Montour Falls.

10 Savannah.

11 Lexington.

12 Cherry Valley.

13 Hobart.

14 Lockport.

15 Sing Sing.

16 Little Falls.

17 Lebanon Springs.

18 Bath.

19 Niagara Falls.

20 Guilford.

21 Herkimer.

In all these cases, many of which were of great importance from a sanitary standpoint, the nuisances have been abated or steps taken looking to a speedy removal of the cause of complaint.

As the health law now stands, there is sometimes a lack of power on the part of the Health Commissioner to enforce sanitary requirements. This defect should be remedied by the necessary legislation.

## INVESTIGATIONS ORDERED BY THE GOVERNOR

Several complaints have been referred to the Department by the governor during the year.

### GREENWOOD LAKE

The first of them was a complaint of conditions detrimental to health, caused by the lowering of the water in Greenwood lake.

Upon investigation it was found that a nuisance detrimental to health existed, but the party responsible for the condition was the New Jersey water company, and the gates which were opened for letting off the water were situated in the state of New Jersey. A determined effort was made to secure action by the New Jersey state board of health, which has jurisdiction over the offending corporation, but thus far no action has been taken by the New Jersey authorities. The attorney-general has given the opinion that legal redress can only be secured through an action brought in the United States court—a tedious and costly litigation.

### DEER PARK

A complaint from citizens of Deer Park that the abandoned Delaware and Hudson canal was a source of danger to health owing to many pools of stagnant water at various points in the old canal bed.

Engineer Landreth made this investigation and reported that the complaints were well founded, but also discovered that under section 4, chapter 469, of the laws of 1899, the company its successors or assigns are required to keep the bed of the canal in a sanitary condition. This feature of the case was referred to the attorney-general to find the present ownership of the canal. No further complaints have been received, and it is safe to assume that the present lessees have taken steps to abate the nuisance.

### EIGHTEEN MILE CREEK

The condition of Eighteen Mile creek at Lockport was the subject of an investigation ordered by the governor.

The conditions were found unsanitary, and a copy of our report was sent to the local health authorities with recommendations which they have ample power under the law to enforce.

## WESTERN HOUSE OF REFUGE FOR WOMEN

The sewage disposal plant at the Western house of refuge for women at Albion was a cause of complaint to the governor by various citizens of the village of Albion. After careful investigation it was found that the system installed there (a modification of the boring system) had never been in operation continuously throughout the 24 hours as it should have been, and the managers were advised to operate the plant both night and day for 60 days, during which time a sanitary engineer from this Department should again inspect it and report his findings. A suggestion of State architect Heins, that the disposal plant be enclosed in a building which would not only protect it from freezing (which might destroy the necessary bacteriological processes) but also confine any odors arising from the plant, was also recommended to the board.

The above complaint suggests the propriety of having the sanitary appliances in all state institutions under the direct supervision of the State Department of Health, and an amendment to the Public health law is in course of preparation for introduction into the legislature requiring this course. The amendment should be adopted, thus relieving the various state institutions from the importunities of rival contractors and promoters of special appliances, which are liable to prove both expensive and inefficient.

## TOWN OF GUILFORD

A complaint made by O. B. Parker and others of the town of Guilford of an alleged nuisance caused by the effluent from the Guilford creamery was also referred to the Department by the governor.

Many other complaints against creameries have been received, and the proper disposition of them is a difficult sanitary problem. There can be no question that these creamery effluents constitute a nuisance during the summer season. The offensive odors of decomposition, the swarms of insects attracted thereby and the pollution of the streams into which they finally empty, and the large and constantly increasing numbers of creameries in the state combine to make a very urgent demand for improved conditions. A systematic study of the question has been commenced by the Department, but we are not yet prepared to make definite general recommendations.

## SMOKE NUISANCE AT YONKERS

A very urgent complaint from citizens of Yonkers against a soft coal smoke nuisance was also referred to this Department for investigation.

Two hearings were held in Yonkers, many witnesses examined, and opportunity given to the Yonkers railway company (the offending corporation) to be heard. The company made no defense, frankly admitting that soft coal caused the nuisance, and finally agreed to burn hard coal only. Since that time there have been no complaints, and we have received information that the nuisance has been entirely abated.

## BUREAU OF CHEMISTRY

Willis G. Tucker, M. D., director of the Bureau of chemistry, has prepared the following synopsis of the work of this bureau during the year.

Through lack of special appropriation the chemical work of the Department has been restricted to the analysis of certain samples of drinking water of special importance and to the examination of a limited number of miscellaneous articles. No special investigations could be undertaken, nor systematic examination of food, drugs, illuminating oils and kindred articles conducted, nor can any proper supervision of such be exercised until suitable provision is made for defraying the cost of inspection, the collection of samples and the analytical work. Under various existing statutes the Department is required to take cognizance of the adulteration and sophistication of articles of food and drink, including fermented and spirituous liquors, as also of drugs and illuminating oils, and to protect the interests of the people of the state in these and kindred matters, but such work must remain undone until suitable provision is made for defraying the cost of conducting it.

During the period stated 34 samples of drinking water have been examined, most of the samples having been received from local boards of health and from the following localities: Alpine, Athens, Charlton (two samples), Chenango Lake (two samples), Clarkstown, Elmira, Fredonia, Fort Edward (two samples), Glen, Gowanda, Granville, Howe's Cave, Mechanicville, Middletown, Moravia, Nanuet (two samples), New Lebanon (four samples), Rome (two samples), Sonyea, Stottville, Troy (two samples), Trumansburg, Waterloo, and not stated, two samples. A circular giving full directions for collecting and forwarding samples,

and requesting information concerning them and the reasons for desiring an analysis, has been sent to all applicants and the information furnished concerning the source and surroundings of the supply has been taken into consideration in construing the analytical results and forming an opinion as to sanitary quality. The analyses made have included the usual determinations of chlorine, free and albuminoid ammonias, nitrogen in nitrites and in nitrates, etc., deemed sufficient in most cases for determination of quality for domestic use. The analytical results and full particulars concerning these samples will be found in the report of the director of the Bureau of chemistry.

Miscellaneous examinations made during the period stated have included analyses of a preparation for the cure of the morphine habit which has been largely advertised and was found to contain a considerable quantity of morphine, of quinine tablets, vanilla extract, sugar thought to contain some poison, raw milk-sugar, an external application for lupus, and the examination of a number of samples of water taken under instructions from an excavation at Athens after the addition of salt to a privy vault near by the purpose of determining whether leakage from the same took place. Inquiries relating to the use of food preservatives, the testing of illuminating oils and many other matters pertaining to sanitary chemistry and hygiene have received attention, but a large amount of work must remain undone until proper provision is made for carrying on the chemical work of the Department.

## BUREAU OF PATHOLOGY AND BACTERIOLOGY

This new department was established early in the year and George *Blumer, M. D., appointed* director. Its work is of the

greatest importance in the administration of the Public health law. Local health officers are supplied with diphtheria cultures; sputum of consumptive patients is examined, blood tests are made in suspected typhoid fever cases, and, in short, all pathological and bacteriological examinations are made for health officers of such municipalities as are unprovided with facilities for such examinations. The director reports as follows:

"The work has consisted of the bacteriological examination of drinking water, examination of diphtheria cultures, examination of sputum for tubercle bacilli, and a few Widal tests and miscellaneous examinations.

"During the period stated 43 different samples of drinking water have been examined, of which number nine have been passed as first-class drinking waters, and 34 have been condemned. It is necessary to state that the condemnation of a good many of these waters has been based simply upon the high bacterial count, and the Department has usually been advised in such cases that such a water would probably not set up disease. Only waters showing evidences of organic contamination have been absolutely condemned.

"Sixty-two cultures have been examined for the presence of the diphtheria bacillus. In 33 of these the diphtheria bacillus was present but in 29 it was not found. Most of these cases were primary cultures for diagnosis, but a certain number of them were cultures for release.

"Seven specimens of sputum have been examined, of which number two contained tubercle bacilli, while five did not show them.

"Three Widal examinations have been made, all of which were negative.

"MISCELLANEOUS EXAMINATIONS

"One specimen of milk was examined and condemned on account of an excessive bacterial count.

"A specimen of cheese, which had given rise to an epidemic of cheese poisoning, was examined, and a streptococcus was isolated from it.

"A sample of a substance known as 'Freezine,' for the preservation of milk, was examined and condemned on the ground that it contained formaldehyde."

## ANTITOXIN LABORATORY

Herbert D. Pease, M.D., director of the Antitoxin laboratory, has prepared the following report of his Department work:

"I have the honor to present herewith a short report on the organization of the Antitoxin laboratory of the State Department of Health, which was established by you upon the authority granted by the legislature and approved by the governor, reading as follows:

"'CHAPTER 645, LAWS OF 1901

"'For the necessary expenditures for the manufacture and standardization of tetanus, streptococcus and diphtheria antitoxin, and for further investigations of serum therapy in tuberculosis, typhoid fever and kindred diseases, the sum of twenty thousand dollars, or as much thereof as may be necessary. Such expenditure to be made on the approval of the governor.'

"Under this authority the appointment of the writer as director of the laboratory was made by you in the early summer, *and such steps as were* possible to prepare suitable quar-

ters and equipment for the work were then undertaken. The fund not being directly available for salaries and running expenses before October 1st, the beginning of the actual routine work was of necessity postponed until that date.

"The happy arrangement made by you with the trustees of the Bender hygienic laboratory, whereby the laboratory part of the work could be carried on in that institution, greatly facilitated the early establishment of the work. The changes in the Bender laboratory were pushed forward during the summer by the trustees under the supervision of the writer. The laboratory now has at its disposal two general laboratory rooms, a practically dust-proof inoculating room, an incubator room and an office, all conveniently arranged and specially fitted for its present needs. Two storerooms and the use of excellent quarters for the experimental animals in the basement are also available.

"The property selected for the animal house was formerly the private stable of the late G. W. Van Slyke, conveniently located on Yates street, a few blocks from the laboratory. This property consisted of a plot of land 44 by 187 feet, on the front of which was a two-story solid brick structure 44 by 40. The necessary alterations of the building consisted in first replacing the old floor with a solid cement foundation, covered by vitrified paving brick laid in cement. Logan's patent hygienic stall floors and drains were also laid at this time. The whole building was thoroughly drained, and the plumbing, roofing and woodwork thoroughly overhauled, and necessary additions made. A part of the carriage house was closed off with brick partitions to serve as an operating room, and an addition to the building capable of housing two horses was put up as an

isolation ward. Also the entire building was painted inside and a part outside, and the quarters for the stableman and family put in habitable condition. The lot in the rear of the stable was fenced off to serve as a suitable paddock for exercising the horses. The capacity of the stable is 15 large animals. Nothing was left undone to put the building into the needful hygienic condition and to specially adapt it for the work in hand. This gives to the state one of the most hygienic antitoxin stables in the country. The cost of the original property and its transfer was $2,973.48; for alterations $3,330.43, making a total of $6,303.91.

"The equipment for the laboratory was also planned during the summer, and bids upon the major portion of the same were obtained. Everything was therefore in such shape by the time the money became available that the actual work of the laboratory began the first week of October. At this time the appointment of the following persons to their respective positions became operative: Dr. Charles S. Witbeck, assistant bacteriologist; Orlando S. Markham, stableman; John J. Ryan, cleaner. Later on Miss Marie A. Dowling was added to the staff as an assistant.

"I desire at this time to render acknowledgment for the many suggestions and valuable assistance of Dr. Albert Van der Veer, treasurer of the board of trustees of the Bender laboratory, in the many operations connected with the organization of the work.

"The appropriation calls primarily for the preparation and standardization of three antitoxins, and secondarily, for investigations in the field of serum therapy.

"The laboratory will also be in a position to investigate the conditions under which antitoxins, vaccine virus and other animal products are produced by manufacturing concerns or other laboratories, and also to test such products for their strength and purity when called upon to do so by the Department.

"It being well understood that such an institute could not inaugurate work on all lines at the outset, it became necessary to formulate some definite plan of procedure. Practical and financial considerations led to the decision to first establish the production of those antitoxins which most readily lend themselves to production upon a routine working basis, and then to take up the investigations called for.

"According to this plan work first began on the production of diphtheria antitoxin in order that its details might be well settled before beginning the more difficult task of producing the antitoxin for tetanus. To place the latter on as sound a basis as is desired considerable experimental work will be necessary.

"The production of a highly potent tetanus antitoxin demands infinitely more care and painstaking effort than that of diphtheria. It will be, however, one of the main objects of this laboratory to use every means and effort to produce a highly potent and efficient tetanus antitoxin.

"According to the above plan the director personally inaugurated the routine work necessary for the production of the diphtheria antitoxin early in October. Up to the end of the period covered by this report (January 1, 1902) considerable amounts of the diphtheria poison were produced, and the same injected according to the usual procedures into 15 horses. Trial tests of the blood serum of the latter indicated at that

time that the laboratory would be able to place at the disposal of the Department enough diphtheria antitoxin to supply the needs of the various state medical, charitable and penal institutions in the month of February; also shortly afterwards to supply those entitled to receive the same under the ruling of the Department.

"All the antitoxin issued from the laboratory will be submitted to the most rigid test for its purity and antitoxic strength, conducted by the director in person. The strength will be for the present expressed in the term of antitoxic units, the test being conducted after the method of Prof. Ehrlich of Frankfort, Germany, which method is now almost generally recognized as the standard for such tests, both in this country and abroad.

"Active work upon the production of antitoxin for tetanus will begin during the coming month, at which time the diphtheria work may be considered fairly started as a matter of routine.

"The value of the use of the diphtheria antitoxin in the treatment of diphtheria is so generally accepted that it is hardly necessary to set forth statistics and a discussion of the subject at this time. It is sufficient to quote the figures given in the report of the state board of health of Massachusetts for the year 1900. During the years 1891–4, the preantitoxin period, the fatality from diphtheria was 28.3 per cent, while during the years from 1895–1900 the general fatality from diphtheria was only 10.2 per cent. During the last year when diphtheria was specially prevalent in that state the fatality was only 10.6 per cent, although the increase in the number of cases in the larger towns and cities was 85 per cent over the previous year. In

[illegible] death-rate remained the same with an increase of [illegible] per cent in the number of cases.

[illegible] state the mortality from diphtheria per 1000 deaths from all causes has been as follows during the last 14 years:

| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

Average for the first 7 years . . . . . 50.19

| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

Average for the last 7 years . . . . . 29.57

These figures show that for the last seven years since antitoxin came into more or less general use there has been an annual average saving of life from diphtheria at the rate of 20 persons for every 1000 deaths from all causes. As there were in the state over 120,000 deaths in 1901, the saving of life during that year amounted to over 2500 persons. The attitude of the entire scientific world towards the use of antitoxin in diphtheria is best exemplified by the recent bestowal of the Nobel prize of $40,000 on its originator Behring for this, one of the greatest discoveries in the field of medicine in recent times.

"The use of diphtheria antitoxin as a preventive is not as widespread as it should be. It has recently been definitely shown that immunity produced by such use of it lasts on an average from three to four weeks. This period is as long as is usually necessary to protect a person after one exposure to the disease. Its more general use in this manner is a matter for attention along educational lines.

"The use of a specific antitoxin in the treatment of tetanus has unfortunately not been attended with such remarkable results as in the case of diphtheria. There are several conditions which partially, at least, explain this unlooked for result. The production of a remarkably virulent poison or toxin by the tetanus bacillus is not difficult. Its preservation is, on the contrary, not easy of accomplishment. The injection of it into horses is attended with uncertain and often unfavorable results, as these animals are especially susceptible to it. These and other apparently minor difficulties render the production of a highly potent tetanus antitoxin a matter of much careful and painstaking work, but the chief cause for the lack of such favorable results in its use as have attended the use of antitoxin for diphtheria lies in the character of the disease itself. Tetanus toxin either generated in the animal body by the bacillus having gained access through some wound, or experimentally introduced into the system, does not manifest its presence immediately. The first symptoms produced by it are the results of its actual injurious effects on the nervous system, and such injuries are beyond the restorative power of any remedy. Also in all but the very mild cases and those with a late onset the amount of toxin generated and present in the general circulation at the time of the first manifestation of the symptoms of the disease has been estimated to be so enormous that the amount of antitoxin necessary to neutralize this poison would be in some cases too great to be injected into the body. The antitoxin also requires a certain time to produce its effect on the poison, and for this reason recourse has of late been taken to bringing large amounts of it into direct contact with the tissues most sensitive to injury by the poison, namely, the

brain and nervous system, and still larger amounts into contact with the poison in the general blood circulation by venous infusion. Virtually all the recent recoveries in severe cases have been due to the application of either one of these methods, and the combination would undoubtedly be of even greater usefulness. As much as 500 cubic centimeters of the antitoxin has been injected into the venous circulation in a most severe case with a favorable outcome. While this unusual violent and fatal disease demands heroic treatment after its inception, its prevention is a matter of almost comparative ease by the use of preventive or immunizing doses of tetanus antitoxin. In localities where cases of tetanus are of frequent occurrence the treatment of wounds most likely to be contaminated with the tetanus bacillus should include the injection of a small preventive dose of tetanus antitoxin. Recent experiments in the treatment of Fourth of July pistol wounds, which commonly result in tetanus, have demonstrated that such use of tetanus antitoxin is practically a sure means of preventing this disease. This is corroborated by a recent experience of some veterinary surgeons in the treatment of wounds liable to be infected with tetanus in the lower animals, chiefly in horses. The value of this method of preventing the disease has also been demonstrated by the experience of workers on horses producing diphtheria antitoxin. In this case the numerous punctured wounds made during the treatment of such horses multiplies the possibilities of the infection of them with tetanus. The prevention of such infection is assured by the injection of a small dose of tetanus antitoxin previous to such operation.

"The attempt to cure tetanus, experimentally produced in mice, by the use of antitoxin within 24 hours after the onset

of the symptoms, requires a thousand times the quantity of the serum which would be necessary to prevent the disease if used shortly after the infection of the animal.

"Recent cases of tetanus occurring as a result of the lack of cleanliness after vaccination could have undoubtedly been prevented by the injection of a small amount of tetanus antitoxin at the time of vaccination. This procedure would only be necessary in the case of vaccination of persons known to be lacking in habits of cleanliness, and in regions where tetanus is prevalent.

"It will be one of the chief aims of this laboratory to prepare tetanus antitoxin in such quantities and of such potency as will permit its use in effective doses for treatment of the disease, and also as a preventive in all cases of wounds where infection with the tetanus organism is a possibility.

"One of the chief obstacles to the use of streptococcus antitoxin is the present inability to differentiate between the individual species, which probably make up the group of bacteria included under the term of streptococcus. Antitoxins are generally specific; that is, useful only for the treatment of the diseases for which they are specially produced. There is no surety that the streptococcus used in the production of a serum would be of the same species as the one causing streptococcus infections in even a small proportion of cases of that disease. It is, moreover, only with the greatest difficulty that a strong streptococcus poison can be produced and preserved, and without the latter a potent antitoxin serum cannot be produced.

"The production of effective antitoxins for tuberculosis, typhoid fever and various other infectious diseases has not yet been accomplished. The bacteria causing many of these

diseases do not produce soluble toxins outside the living body in such quantity and of such a character as will permit the immunization of an animal by their injection into it. Much work is being done along these lines, and this laboratory will endeavor, in so far as its facilities may permit, to participate in such investigations.

"The above summary indicates the possibility of the value of the work of this laboratory in the field of serum therapy. The production of these remedies for use in state institutions and for distribution to those who are the legitimate objects of official state and local charity places the work of the state laboratory in a position analogous to that of the state hospitals and other state charitable institutions. The latter are unquestionably within the proper field of state support and control. That state support is not only proper for our work, but at the same time may be to the highest degree economical, can be readily seen by reference to the last published report of the state board of health of Massachusetts for the year 1900. That board established the first state laboratory in this country for the production of diphtheria antitoxin in 1895, and during the six years of its existence has amply demonstrated the value of the undertaking to the state. The facts below from the above-mentioned report indicate the financial possibilities of this laboratory, which is the second state antitoxin laboratory established in this country. The financial value of the work of the Massachusetts laboratory may be judged by the results for the year ending March 31, 1901, as follows:

"Number of bottles distributed, 53,389. Each bottle contained 1500 units, and of an average potency of 425 units per cubic centimetre. The retail value of serum of such an average

potency is $2.75 per bottle, thus making the total valuation of the state product, $146,810.75. Allowing a discount of from 30 to 50 per cent to state or municipal authorities (the state hospital at Willard, N. Y., received a discount of 30 per cent during the past year) the net value would be from $75,000 to $100,000.

"This was accomplished at a total cost not greater than the appropriation asked for the laboratory of the New York State Department of Health of $15,000 for the coming year.

"The value of other antitoxins to be produced and distributed is not considered in the above summary. This would increase still further the earning power of the laboratory. The practical and scientific value of the important research work carried on in the Massachusetts laboratory by Dr. Theobald Smith has made for that institution a high reputation throughout the scientific world.

"The state support and control of these laboratories also permits the work to be carried on with the utmost freedom from secrecy, and these conditions bringing scientific workers as they do into close practical touch with the medical profession enable the latter to become familiar with the most recent advances along these lines of scientific research. This is one of the few contributions by the state towards the advancement and distribution of scientific medical knowledge.

"This educational aspect of the work upon the profession also has a direct and beneficial effect upon public opinion concerning the prevention and treatment of infectious diseases.

"The laboratory management will make every effort to extend its usefulness in this educational direction as far as possible.

"Allow me at this time to record my hearty appreciation of the kind and helpful treatment constantly received at your hands since I undertook the work."

## CANCER LABORATORY

The legislature of 1901 placed this research laboratory, located at the University of Buffalo, under the charge of the State Department of Health.

Prof. Roswell Park was appointed director, and his report for the portion of year from June 1, 1901, to January 1, 1902, follows:

"I have the honor and the pleasure herewith to submit to you the report of the conduct and operation of this laboratory since it passed under the control of the State Department of Health last June. As is known, it had been previously conducted as an independent institution and had published its third annual report about that time, consequently not a year has elapsed since the change in status and the appearance of our last report, all of which will explain why it is not possible now to make a report covering a fiscal year of work. Our first year as a part of the State Department practically does not expire until the first of October next, therefore a report submitted to you at this time must be but partial and in the time limit incomplete. The transfer of this laboratory above alluded to seems to be an exceeding happy solution of certain difficulties of its maintenance, but it at the same time necessitated our appropriation being spread over 16 months of time instead of 12, and this in turn necessitated reducing expenses, especially through the summer, as far as possible. There-

fore, during the summer but a relatively small amount of work was done, and one of our staff, namely, Dr. Clowes, was authorized to spend some weeks abroad in visiting other laboratories and ascertaining so far as he could what was going on in other parts of the world in similar lines of study.

"Now, and for the first time in the history of such investigations, a suitable building has been supplied and is just being opened for this particular line of research. It has been built by the medical department of the University of Buffalo with funds supplied by generous friends, who provided the land, and especially by Mrs. W. H. Gratwick, who has furnished the means with which to erect and equip a beautiful research laboratory. The ground floor and plans of this building were published in our last annual report. At that time, however, the walls were hardly up. Now I am able to report that the building is practically complete and already partially occupied, and that hereafter all the work done by this department of the State Department of Health will be conducted in this building, which is tendered to the state by the medical department of the University of Buffalo free of rent and for this purpose, only the necessary running expenses of the institution being borne by the state. These running expenses include coal, water, electric power, light, gas, etc.

"It is scarcely necessary to present again these detailed plans, but a brief description of the building may be of service: It is 50 by 60 feet in area, built of brick and terra-cotta. The basement contains the heating apparatus, cold-storage room, combustion room, machinery room, etc. The first floor provides a clinical laboratory with room for work on contagious diseases, the outfit for photomicrography, private laboratory for the clin-

ical microscopist and janitor's quarters. The second floor contains offices, library, museum, surgical laboratory and pathological laboratory, with an annex for the pathologist. The third floor is divided between the department of bacteriology and chemistry, and contains also a large photographing room, with private rooms for the chemist and the bacteriologist. Above the third floor is ample space for caring for small animals and housing the ventilating apparatus.

"This laboratory stands just across the street from the general hospital, where a large amount of the clinical material utilized for the study of cancer is secured. The hospital supplies an abundance of such material, while in addition yet more is received from all over the state as well as often from outside.

"The laboratory staff is the same as when our last report was published, namely, Dr. Roswell Park, director; Dr. H. R. Gaylord, pathologist; Dr. Irving P. Lyon, clinical microscopist; Dr. G. H. A. Clowes, chemist, and Dr. H. G. Matzinger, bacteriologist. In addition there is a regular stenographer and secretary, with assistants, who vary in number according to the amount of work to be done, they being often volunteers or working at a merely nominal salary.

"Facilities have been provided in the building for special investigations and for special students, numerous intimations having been received from various investigators that they would like to come here and pursue special studies in this subject in connection with our work.

"As each member of our staff has been experimenting and working along special lines, it will perhaps be worth while to indicate the character of the work done by each.

"Since the publication of our last annual report Dr. Gaylord has continued work along the lines indicated in his preliminary report. The status of the investigation is not advanced greatly beyond the point indicated at that time. There have appeared, however, in various foreign journals reports of investigations indicating that other observers have reached similar conclusions to those indicated. The first of these of interest is an article by Pianese, of Naples, on 'A protozoon infecting the epithelium of the kidney tubules of the guinea-pig.' Pianese published a long monograph in 1895, and at that time arrived at the conclusion that all the so-called cell inclusions of cancer were degeneration products. He has now arrived at the conclusion that the organism which he has just been studying presents appearances in the tissue and causes changes in the epithelium which are very similar or indistinguishable from those found in cancer. This is a very significant article. Nils Sjöbring, of Lund, who published an article on the cell inclusions in cancer and interpreted them as protozoa in 1890, has published and demonstrated cultures of organisms obtained from cancer. These he believes belong to the protozoa, but to an as yet unrecognized class. Prof. von Leyden, of Berlin, has published an article describing amoeboid bodies in peritoneal fluid, and the presence of cell inclusions which are identical with those described by Thoma, Sjöbring, Plimmer and ourselves. He thinks that the cell inclusions are protozoa. The amoebae observed by him were passed upon by Professor Schaudin, the biologist, and have received recognition in recent biological literature. The most striking confirmation of our work is an article by Professor Bosc, of Montpellier, France, which appeared in the *May number of the French Archives* of Pathology.

The article is a comparative study of vaccine, variola and cancer, and to this extent covers almost identical ground with our own observations. He has likewise studied the disease known as sheep-pox, the organism of which he considers more closely related to the organism found in cancer. The appearance of this article almost synchronously with our own adds great interest to the question.

"As to the status of the vaccine organism with which we have compared our findings in cancer, a significant article has appeared by von Wasielewski, who has given many years to the investigation of vaccine, and concludes that the characteristic bodies found in the epithelium in vaccination are the vaccine organism. One factor of his reasoning in this connection is that the vaccine organism can be removed by filtration through a Pasteur bougie, and is therefore of invisible dimensions. It may be stated that to our minds this is the only possible criticism of the present status of our own work—in that thus far we have been unable to entirely rule out the possibility of our results being due to the presence of an infinitely minute and invisible parasite. We have in contemplation, however, experiments which we hope will ultimately give us evidence upon this point.

"A further comparison of our work with that of Professor Schueller, of Berlin, shows a number of discrepancies inasmuch as many of the forms described by him are much larger than any observed by ourselves. We are at present doubtful of the identity of our observations with his.

"As to the possible nature of the organisms described by Dr. Gaylord, interesting and suggestive observations have been made by Nawaschin and Podwyssotsky upon an organism which

in some respects resembles those described by us. The organism in question is the *plasmodiophora brassicae.* It belongs to a class which lies midway between the animal and vegetable organisms, and the most recent classification (Doflein in a work on 'Protozoa as the cause of disease') classifies them as protozoa or animal parasites. The organism causes the disease known as clubbing or club-root, and infects cabbages, turnips, radishes, etc., and is widely distributed both in this country and abroad. The organism causes true tumor formation in the infected vegetable, and Podwyssotsky has recently shown that it is capable of infecting animals, in which case it produces tumors and infects the cells. The appearance of this organism, both in the cells of the plant and in infected animals, closely resembles the cell inclusions described by Thoma, Sjöbring, Plimmer and Gaylord.

"While we have perhaps modified our views regarding some of the details connected with our previous experiments, the main points stand as before and have received both direct and indirect confirmation by the observations of the scientists quoted above.

"In view of the recent discovery of the transmission of certain diseases by the stick or bite of infected mosquitoes (malaria, yellow fever) and other insects (Texas cattle fever from the cattle tick, *Boöphilus bovis*) a new field has been opened for the experimental investigation of the cause and spread of various other diseases of unknown etiology. Cancer is one of these diseases, and for years the theory has been occasionally suggested that it might possibly be transmitted by certain insects, e. g., wasps, bedbugs, mosquitoes, etc. Dr. Irving P. Lyon has made preliminary experiments on this theory. During the

month of July, 1901, mosquitoes (Genus culex) reared from larvae, were fed for days on food smeared with carcinoma and sarcoma and then released in a mosquitoe-proof cage containing a monkey and guinea-pig, the later partially shaved in order to better expose it to the attack of the mosquitoes. The mosquitoes were renewed from time to time in batches of 10 to 50. The result of the experiment appears to have been negative, as the monkey and guinea-pig are still (January, 1902) in good health and show no evidence of malignant disease. They will be kept under further observation.

"The line of experiment here mentioned should be extended to include other varieties of mosquitoes and other common domestic insects. Where a positive result obtained in such an investigation its importance would be at once apparent, for the control of the disease would then be a simple matter of protecting one's self from the bites of the infecting insect.

"The statistical study of cancer, reported by Dr. Irving P. Lyon for Buffalo in our last annual report, has also been continued during the present fiscal year. Dr. Lyon has begun a more or less systematic analysis of the mortality returns to the State Department of Health by the different sanitary districts of the state and the specified places within those districts during the past 15 years. The purpose of this study is to ascertain whether any sections of the state or towns have been especially afflicted with cancer out of proportion to their population and during a sufficiently extended period of time to remove the possibility of chance as an explanation of such high cancer mortality. Although this investigation, because of its wide scope, has been scarcely more than begun, enough of interest and importance has already been discovered to indicate its

great value in elucidating the theory of the parasitic or infectious nature of cancer.

"It appears that the east-central sanitary district has shown the highest mortality rate from cancer in the state, and among the 'specified' localities in this sanitary district the town of Brookfield stands preeminently first in its sacrifice of life to this disease. This town, consisting of a purely rural community, during the 15-year period (1886-1900) had a total mortality of 720 deaths from all causes, of which 82 were due to cancer; i. e., out of every 8.7 persons of all ages dying from all causes one died from cancer. This rate from cancer exceeds the average rate from consumption for the state during the 10 years 1890-1899, the rate from consumption being one out of nine deaths from all causes. Not only is the gross mortality rate from cancer in this town most extraordinary, but a special investigation in this town now being conducted by Dr. Lyon shows a large number of 'cancer houses,' so called from their having had two or more cases of cancer develop in them. With this investigation only now well under way and far from completed, 11 such houses are known, 10 having two cases and one showing three cases of cancer each. In only four out of the 11 cancer houses was the second case related by blood to the first case of cancer.

"Just over the border line of this town in the township of Plainfield in a sparsely populated country there has been discovered a special cancer center, where nearly all of the houses within a radius of one fourth mile have had from one to five cases each, there being eight or nine such houses, one with two cases (mother and son), one with three cases (husband, wife and non-related third person), one with five cases (husband, wife and

three children), and the others with one case each. Such a condition as here discovered, as well as the general high mortality rate for the town of Brookfield with its numerous 'cancer houses,' goes far toward confirming the belief that cancer is an infectious disease, widely distributed in the world, but with definite endemic foci or breeding places of the disease.

"During the summer Dr. Clowes made a short tour in Europe in the course of which he visited several of the leading scientific research laboratories and universities both in England and on the continent. A considerable amount of time was devoted to visiting the most prominent workers in the field of cancer with a view to making ourselves thoroughly acquainted with the work which is being carried on by others on the problem in question. Several leading scientific authorities both in France and Germany were consulted as to their views regarding the question at present under investigation in the state laboratory. It was most satisfactory to find that the work accomplished in this laboratory had created a most favorable impression abroad, and that our theoretical conclusions were in most cases heartily supported. This tour also afforded Dr. Clowes an opportunity for visiting numerous modern institutions for research, where he made observations regarding the latest improvements in laboratory methods and equipment employed in those institutions with a view to improving the efficiency of our own laboratory if possible. While on the spot he was also enabled to procure a considerable amount of material and literature which would otherwise have been difficult to obtain.

"The chemical and bacteriological departments of the state laboratory, which have been carried on to a considerable extent in conjunction by Drs. Clowes and Matzinger during the few

months that have elapsed since the last report was published, have been principally occupied in pursuing the course of work laid down in the report in question. These departments have been seriously handicapped by the inadequate temporary quarters provided for them pending the completion of the new building. This necessitated the actual work being limited to investigations of a more or less general and preliminary nature, which investigations have been of considerable value in indicating those lines along which more exhaustive studies should be pursued during the coming months. The problems involved in connection with parasites which may play a rôle in the production of cancer, and their culture on artificial media, have been pursued along two distinct lines. In the first place efforts have been made to acclimatise yeasts, fungi, protozoa, etc., to development in living animals, and then conditions were chosen which from a theoretical standpoint would be most likely to lead to the formation of tumors by this means. On the other hand, every possible effort is being made to cultivate parasites from cancerous material on artificial media and by every possible means to facilitate their growth and development in animals. Investigations of a toxicological and physiological nature have also been carried out, but this portion of the work is of such a preliminary nature and one requiring such a considerable amount of confirmation as to make it impossible to publish any results at present. The problems of metabolism involved in this disease have also been attacked from a chemical standpoint, and very elaborate investigations are planned for the forthcoming year. A considerable number of experiments, especially of a micro-chemical nature, have been carried on with

a view to confirming and supporting the work of the pathological department. This applies especially to those investigations regarding parasites present in tumors and other organisms, such as coccidia and plasmodiophora brassicae, regarding the nature of which work is at present being carried on in the laboratory. A great portion of the time of this department has been devoted to working up the literature of the subject, which is very extensive. Abstracts have been made with a view to facilitating the work and experiments of other investigators, repeated in order to establish the correctness or errors of their findings. Our efforts at the present moment are principally devoted to formulating a systematic plan for future work on a larger scale, and in directing the construction and arrangement of the new laboratory with a view to facilitating as far as possible the work of the future.

"It will thus be seen that a great deal of work has been done on comparative lines, which is most suggestive, and which nevertheless is not yet in shape for publication as a contribution to science. No small part of our work has consisted in examining, indexing and comparing the work and results of others in all parts of the world. We have felt that frequent comparisons with the conclusions reached by others are the greatest safeguard against a repetition of their errors. Therefore we have endeavored to make a careful study of the world's literature on the subject, which is very rich, the study being both extremely valuable and time consuming.

"It is pleasant to note that this collective and scientific study of cancer which was originated in New York state, this being the first laboratory devoted to the work which was ever organized, has been followed and imitated in many other parts of

the world. In England, for instance, there is now a national cancer society which two years ago sent over to this laboratory a special investigator who, upon his return, reported most favorably upon the work done here. In London, the Middlesex hospital has organized a similar laboratory and devoted certain space both in the building and in the wards to this work. Similar interest has also been shown in Birmingham. The German society for the study of cancer has already done a large amount of statistical work, and manifested every desire to cooperate with this laboratory. In fact, two members of our staff have been made foreign members of that organization (Drs. Park and Gaylord). In Russia a donation of 700,000 rubles has been recently made for a similar purpose. During the past summer one of the most celebrated of German surgeons, Professor Czerny, of Heidelberg, made a special visit to this country for the purpose of seeing this laboratory and the various cancer hospitals in the United States. He expressed himself as in most thorough accord with the methods and the results of our work. Professor Koch, of Germany, has also received recently a large grant from the German government for similar work, and Professor Ehrlich has been the recipient of a large grant from private sources for the same purpose, and has anounced that hereafter he expects to devote his principal energies to this study; all of which will indicate the widespread interest among scientists in this line of research.

"The results of our past year's work have been to strengthen our evergrowing convictions that cancer is an infectious disease, which are both sustained and confirmed by the work of leading observers all over the world; i. e., men who are everywhere regarded as authorities. Moreover, we have never seen

any reason to alter the statements upon which in the beginning this laboratory was largely founded, namely, that cancer as a disease is on the increase. This has been abundantly shown by returns from various other state boards of health as well as by statistics from nearly every civilized country in the world where adequate records are kept. If cancer prove to be a parasitic disease, the importance of its recognition may be perhaps better estimated from the good that has already come from the discovery of the parasites peculiar to malaria and yellow fever, since now that they are known we have learned how to prevent and eradicate these diseases.

"Much has been said in recent literature of the value of the Roentgen or X-rays in the therapy of cancer. I would like to report that generous friends have offered to supply the necessary apparatus for experimentation in this direction, and that the general hospital will supply the space and the accommodations required for the same. I shall hope, therefore, with the next annual report to be able to say something upon our results with this somewhat hopeful remedy.

"In our new building, and assuming our own expenses for maintenance, we cannot expect to conduct the work during the fiscal year from October 1, 1902, to October 1, 1903, on less than it has cost us to previously conduct it. I therefore respectfully urge upon you and upon the legislature that at least $15,000 be appropriated for that time and this work.

"I cannot close this report without my expression of appreciation of your own courtesy and kindly cooperation, not to say active interest, in the operations of this laboratory, and I ought to say as much for my colleagues in the work whose names are mentioned above, who have never failed at any time in interest in [illegible] work or alertness in its conduct. Organized and

equipped as we now are, I feel that if the solution of the tremendous problems before us is ever to be attained by human effort, we are in a position to reach it if only adequately supported."

## BUREAU OF VITAL STATISTICS

The following report of this Bureau has been prepared by F. D. Beagle, registrar of vital statistics:

"There are 1385 local boards of health in the state outside of Albany, Buffalo, Greater New York and Yonkers that are required by the Public health law to file all records of births, marriages and deaths with the State Department of Health each month. These boards represent 932 towns, 415 incorporated villages and 38 cities.

"Through the earnest efforts of the Department the local boards of health have been brought into closer relation with the State Department during the past year, and it is gratifying to note that there has been a marked improvement in the registration of vital statistics.

"While it is to be regretted that there is not a more complete registration of births and marriages, it will be observed from the marked increase in the number of reports received from local boards during the past year, and the interest manifested at present on the part of local registrars to make their reports as complete as possible, the time is not far distant when there will be as complete a registration of births and marriages as there is at present of deaths. The value of the registration of the deaths occurring in the state and the reporting of prevalent diseases to the State Department of Health is plainly shown by the Monthly bulletin issued by the Department.

"While at the beginning of the year there were 212 local boards of health that failed to make their monthly report of vital statistics to the State Department, 25 of which had failed to file reports for several months and several for two or three years, it is gratifying to note that at the close of the year there were but 22 delinquent boards, and this delay was only for the closing month, with few exceptions.

"During the year there were 2434 delinquent notices mailed to local boards of health, and 1412 defective certificates were returned for correction. The annual conference of sanitary officers and registrars inaugurated by the State Department of Health during the year should obviate much of this labor and expense to the department in the future.

"During the year notices were mailed to each of the 1385 local boards of health upon the expiration of their terms of office, asking for the names and addresses of the members of the newly elected or appointed boards, and through this means a complete roster of such boards is kept on file in the office.

"There were 112 transcripts of birth, marriage and death certificates furnished parties during the year to be used in pension claims, settlement of estates, etc.

"By the earnest efforts and faithful performance of the duties assigned to each of the clerks in the Bureau of vital statistics the work is in a satisfactory condition. The current work has been kept up, and all delayed certificates have been indexed and properly filed. The marriage and death certificates having been filed in the new steel cases, they are protected from fire and dirt and their preservation in a good condition made certain. It is hoped that steel filing cases may be provided for the better protection of the birth certificates.

"A separate report of the deaths occurring in the state institutions containing non-residents is being recorded in the Bureau, thus making it possible to obtain a more correct death-rate of each locality.

"The vital statistics reported to the State Department of Health during the year 1901 is as follows:

| | Births | Marriages | Deaths |
|---|---|---|---|
| January | 10,941 | 4,931 | 12,144 |
| February | 11,070 | 4,703 | 11,391 |
| March | 13,639 | 4,742 | 13,071 |
| April | 10,888 | 4,882 | 11,044 |
| May | 11,945 | 4,973 | 11,309 |
| June | 9,780 | 6,619 | 9,137 |
| July | 12,891 | 4,976 | 13,353 |
| August | 11,401 | 4,213 | 10,616 |
| September | 11,384 | 5,422 | 10,134 |
| October | 12,950 | 7,362 | 10,533 |
| November | 10,822 | 6,096 | 9,103 |
| December | 11,678 | 5,761 | 9,953 |
| Total | 139,389 | 64,680 | 131,788 |

"The following is a summary for the year 1896-1900, inclusive:

| | Births | Marriages | Deaths |
|---|---|---|---|
| 1896 | 125,897 | 51,842 | 103,734 |
| 1897 | 122,565 | 49,859 | 97,907 |
| 1898 | 140,886 | 57,086 | 122,741 |
| 1899 | 135,846 | 59,586 | 123,619 |
| 1900 | 144,391 | 61,117 | 132,026 |

## CONFERENCE OF SANITARY OFFICERS

The conference of sanitary officers was held in Albany, October 24th and 25th. It was well attended, represented very completely all sections of the state, and was composed of a body of representative men. It was a gathering of earnest and intelligent health officers and members of boards of health from cities, villages and towns, and it is a pleasure to note that the interests of public health throughout the state have enlisted in their management so generally the better men of local communities. Of the 61 counties in the state, there were representatives from 49, those that were lacking of representation being for the most part the more remote from the place of meeting. Members of the health departments of all the larger cities were present and from all the 38 incorporated cities, except eight of the smaller or more remote; likewise from a good number of the larger villages. The country towns also had good representation. There were 100 health officers registered, and about 50 registrars and other officers besides others interested in sanitary work but not immediately connected with its execution, the gathering well filling the assembly chamber.

At the opening session a paper was presented by Robert C. Taylor, esq., of the New York bar, on certain legal relations of local boards of health. He sketched at length the early years of the work of the State Board of Health, beginning 20 years ago, prior to which there was no state and but few local organizations, the development of which latter comprised its first work, and toward which it has since stood as an alma mater. Almost all the 1400 local boards have been

kept in organization, leaflets for their information prepared and the general management of sanitary work supervised through them and by work outside of their jurisdiction. The legal relations of nuisances and the powers and limitations of health boards, the duties of health officers, the matter of trespass, matters outside of territorial jurisdiction and cognate topics were discussed and illustrated by cases which have come before the courts for review. By reference to these he showed the kind of cases which come within the province of health boards for action. There was much discussion and many questions were propounded, of legal character, for answer.

Dr. Herman M. Biggs, of the health department of New York city, read a paper on "Tuberculosis and the attitude of health officers toward it." His chief contention was that we should minimize now all but the personal factor in its propagation. Too much has been said of it as a contagious disease, to which category scarlet fever, smallpox, typhus fever and measles belong; contagion is not a word to use in connection with tuberculosis; it is not communicable by proximity to the subject. The ejected sputum is the medium of its propagation, and this we should lay emphasis on and educate the people to. Koch he believes correct, and experiments towards infecting cows with human tuberculosis conducted by his department have proved negative. The infection by tuberculosis milk and meat may be ignored for the purpose of emphasizing the prominent factor and securing control of the sputum, the disinfection of premises occupied by consumptives, the early diagnosis by sputum examinations, and the education of the people along this line.

## RECOMMENDATIONS

1 It is especially urged that the suggestion of the chemist of the Department, Professor Tucker, that money be provided for the chemical examination of food and drugs, malt and other liquors, and other legal requirements, receive the careful consideration of the legislature, as the assured purity of these various articles of common use is of great importance to the people of the state. Two thousand five hundred dollars per year would suffice for the prosecution of these investigations.

2 A fixed tenure of office for health officers connected with local boards of health would be conducive to greater efficiency, and a proposed amendment to the Public health law is being prepared providing for a four-year term and a change in the methods of their appointment. These and other minor amendments should become the law of the state.

3 The state commissioner of health should be empowered by law to require vaccination in any and every locality where perfect protection against smallpox requires it, for recent successful vaccination is a perfect protection against this much dreaded disease.

4 The Antitoxin laboratory provided for by the legislature of 1901 is now complete, and its value to the people of the state warrants and demands the appropriation necessary for its efficient operation. The mere item of furnishing all state institutions with diphtheria antitoxin will save more money to the state than the entire expense of maintaining the laboratory. The value of research laboratories is becoming appreciated by the public, which is entitled to all the protection to life and health which such investigations afford.

5 The needs of the Cancer laboratory are urgently set forth by its director, Dr. Roswell Park. Private generosity has provided us a superb building. The state should supply a maintenance fund as suggested. The work of this branch of research work must be continued until the means of reducing the great mortality from cancerous diseases have been discovered.

Respectfully submitted.

DANIEL LEWIS

*Commissioner of health*

# APPENDIX

## Twenty-Second Annual Report

of the

# tate Department of Health

# ancial Report from October 1, 1900, to October 1, 1901

## SALARIES

| | | |
|---|---|---|
| )0 | | |
| | 1. Salaries for October | $1,799 99 |
| | 1. Salaries for November | 1,799 99 |
| )1 | | |
| | 1. Salaries for December | 1,800 02 |
| | 1. Salaries for January | 1,874 99 |
| h | 1. Salaries for February | 1,874 99 |
| l | 1. Salaries for March | 1,875 02 |
| | 1. Salaries for April | 1,833 31 |
| | 1. Salaries for May | 1,733 30 |
| | 1. Salaries for June | 1,733 30 |
| | 1. Salaries for July | 1,733 30 |
| | 1. Salaries for August | 1,733 30 |
| | 1. Salaries for September | 1,733 50 |
| | | $21,525 01 |

## TRAVELING EXPENSES

| | | |
|---|---|---|
| )0 | | |
| | 1. Geo. G. Champlin | $4 45 |
| | 16. S. Case Jones | 38 34 |
| | T. A. Stuart | 16 10 |
| | Walter F. Willcox | 21 60 |
| | E. A. Bond | 25 80 |
| | Thomas A. Killip | 36 16 |
| | 23. Owen Cassidy | 53 02 |
| | 24. F. W. Smith | 26 11 |
| | 26. F. W. Smith | 61 94 |

| | | | |
|---|---|---|---|
| 1900 | | | |
| Dec. | 13. | S. Case Jones | $101 1 |
| | | Walter F. Willcox | 32 2 |
| | | F. W. Smith | 22 9 |
| 1901 | | | |
| Jan. | 15. | Owen Cassidy | 109 2 |
| | | Daniel Lewis | 90 1 |
| | | F. W. Smith | 27 7 |
| | 31. | Walter F. Willcox | 30 7 |
| | | Owen Cassidy | 28 5 |
| | | Daniel Lewis | 58 3 |
| | | A. H. Doty | 29 4 |
| | | S. Case Jones | 71 9 |
| | | B. T. Smelzer | 176 4 |
| Feb. | 13. | B. T. Smelzer | 22 6 |
| | 26. | F. W. Smith | 17 1 |
| | | B. T. Smelzer | 19 7 |
| March | 9. | R. W. Hall | 97 7 |
| | | J. P. Martin | 65 8 |
| | | S. Case Jones | 36 3 |
| | 14. | R. W. Hall | 53 7 |
| April | 1. | Daniel Lewis | 54 8 |
| | 23. | B. T. Smelzer | 79 3 |
| May | 7. | W. E. Johnson | 74 7 |
| | 15. | Daniel Lewis | 66 5 |
| | 27. | F. C. Curtis | 13 8 |
| June | 21. | Daniel Lewis | 125 8 |
| | 30. | W. E. Johnson | 70 9 |
| July | 16. | Daniel Lewis | 93 3 |
| | 25. | T. A. Stuart | 35 8 |
| Sept. | 23. | A. L. Mattimore | 18 2 |
| | | F. C. Curtis | 30 1 |
| | | | $2,039 3 |

## INVESTIGATIONS

| | | | |
|---|---|---|---|
| 900 | | | |
| Oct. | 1. | S. Case Jones (tuberculosis) | $61 77 |
| | | S. Case Jones (tuberculosis) | 1,250 00 |
| | | F. W. Smith (tuberculosis) | 1,505 15 |
| | | C. W. Adams | 164 65 |
| | | C. W. Gay (tuberculosis) | 174 62 |
| | 16. | Bender Laboratory | 15 00 |
| | | Martin E. Lee (tuberculosis) | 5 00 |
| | | J. A. McCrank (tuberculosis) | 7 50 |
| | | C. W. Gay (tuberculosis) | 86 70 |
| | | F. C. Curtis | 17 18 |
| | | W. H. Hinckley (tuberculosis) | 5 00 |
| Nov. | 1. | Edna E. Dodd (tuberculosis) | 11 66 |
| | 2. | Daniel Lewis | 231 00 |
| | 12. | F. W. Smith (tuberculosis) | 500 00 |
| | | S. Case Jones (tuberculosis) | 500 00 |
| | 26. | Bender Laboratory | 85 00 |
| | | C. W. Gay (tuberculosis) | 59 39 |
| | | C. W. Gay (tuberculosis) | 28 97 |
| | | E. V. Moore (tuberculosis) | 49 65 |
| Dec. | 13. | W. H. May (tuberculosis) | 10 00 |
| | | A. S. Patten (tuberculosis) | 6 24 |
| | | Louis Juliand (tuberculosis) | 118 31 |
| | | Nellie E. Britcher (tuberculosis) | 37 50 |
| | | T. W. Jones (tuberculosis) | 7 10 |
| | | S. Case Jones (tuberculosis) | 500 00 |
| | | F. W. Smith (tuberculosis) | 500 00 |
| 1901 | | | |
| Jan. | 15. | A. T. Patten (tuberculosis) | 6 50 |
| | | Louis Juliand (tuberculosis) | 19 78 |
| | | C. H. Jewell (tuberculosis) | 12 01 |
| | | Nellie E. Britcher (tuberculosis) | 25 00 |
| | | Carl W. Gay (tuberculosis) | 189 47 |
| | | J. P. Martin | 160 80 |
| | | F. W. Smith (tuberculosis) | 250 00 |

| | | | |
|---|---|---|---|
| 1901 | | | |
| Jan. | 15. | F. C. Curtis | $86 81 |
| | | T. W. Jones (tuberculosis) | 12 85 |
| | 31. | O. H. Landreth | 251 39 |
| | | S. Case Jones (tuberculosis) | 500 00 |
| Feb. | 26. | Louis Juliand (tuberculosis) | 59 21 |
| March | 9. | F. C. Curtis | 45 77 |
| | 13. | J. P. Martin | 47 60 |
| | 14. | R. W. Hall | 200 00 |
| | | J. P. Martin | 61 30 |
| | 27. | Nellie E. Britcher (tuberculosis) | 59 17 |
| | | C. W. Gay (tuberculosis) | 5 00 |
| | | W. H. Hinckley (tuberculosis) | 5 00 |
| | | Bender Laboratory | 90 00 |
| April | 23. | B. T. Smelzer | 247 50 |
| May | 2. | Bender Laboratory | 30 00 |
| | 14. | C. W. Adams | 332 03 |
| | | Bender Laboratory | 90 00 |
| | 27. | F. C. Curtis | 30 00 |
| | | John J. White | 75 |
| | 31. | F. M. West | 8 64 |
| | | Bausch & Laub Optical Co | 17 40 |
| | | U. S. Mailing Case Co | 5 85 |
| June | 11. | W. E. Johnson | 41 34 |
| | 30. | Whitall, Tatum Co | 3 25 |
| | | Bausch & Laub Optical Co | 3 00 |
| | | W. G. Tucker | 170 00 |
| Aug. | 19. | W. E. Johnson | 53 32 |
| | | T. A. Stuart | 15 39 |
| Sept. | 5. | O. H. Landreth | 585 57 |
| | 23. | F. C. Curtis | 40 00 |
| | | E. B. Estes & Sons | 3 14 |
| | | | $9,702 23 |

## OFFICE EXPENSES

| | | | |
|---|---|---|---|
| 1900 | | | |
| Oct. | 16. | Hudson River Telephone Co. | $11 20 |
| | | Capital City News Co. | 3 45 |
| | | G. A. Birch | 2 90 |
| | | National Press Intelligence Co. | 11 25 |
| | | Postal Telegraph Co. | 53 |
| | | Western Union Telegraph Co. | 3 86 |
| Nov. | 1. | Brandow Printing Co. | 27 63 |
| | | Diamond Paste Co. | 60 |
| | 26. | Hudson River Telephone Co. | 13 30 |
| | 28. | Brandow Printing Co. | 141 93 |
| | | Western Union Telegraph Co. | 4 16 |
| | | H. W. Riggs | 8 00 |
| Dec. | 13. | Western Union Telegraph Co. | 1 01 |
| | | G. A. Birch | 3 05 |
| 1901 | | | |
| Jan. | 15. | G. A. Birch | 3 15 |
| | | G. A. Birch | 2 90 |
| | | Brandow Printing Co. | 72 76 |
| | | Western Union Telegraph Co. | 10 84 |
| | | Fifth Avenue Hotel | 5 00 |
| | | Henry D. Keefer | 5 00 |
| | | The Argus Co. | 7 50 |
| | | Josephine Sharkey | 7 00 |
| | | National Press Intelligence Co. | 15 65 |
| | | J. B. Lippincott Co. | 22 00 |
| | | Albany News Co. | 1 65 |
| | | Journal of Comparative Medicine | 3 00 |
| | | Hudson River Telephone Co. | 18 80 |
| | 31. | Lang Stamp Works | 1 25 |
| | | Engineering News | 5 00 |
| | | F. A. Davis Co. | 5 00 |
| | | F. D. Sargent | 5 00 |
| | | Brandow Printing Co. | 74 05 |
| Feb. | 13. | W. M. Whitney & Co. | 2 00 |

| 1901 | | | |
|---|---|---|---|
| Feb. | 13. | Lemcke & Buechner | $18 00 |
| | | Capital City News Co | 6 90 |
| | | J. A. Eagan | 5 00 |
| | 26. | The Sanitarian | 4 00 |
| | | Western Union Telegraph Co | 21 03 |
| | | Brandow Printing Co | 794 81 |
| | | Lang Stamp Works | 16 00 |
| | | G. A. Birch | 3 15 |
| | | F. D. Sargent | 4 00 |
| | | Hudson River Telephone Co | 14 59 |
| March | 27. | Hudson River Telephone Co | 25 80 |
| | | Engineering Record | 5 00 |
| | | Brandow Printing Co | 1,274 40 |
| | | Albany Law Journal | 3 00 |
| | | F. W. Smith | 13 95 |
| | | Albany Medical Annals | 1 00 |
| | | Journal of Tuberculosis | 3 00 |
| | | Josephine Sharkey | 3 00 |
| | | T. I. Buck | 2 87 |
| | | Western Union Telegraph Co | 7 30 |
| May | 1. | Hudson River Telephone Co | 18 85 |
| | | G. A. Birch | 5 85 |
| | | National Press Intelligence Co | 33 65 |
| | | J. J. Jones | 90 |
| | | The Argus Co | 7 50 |
| | | Lang Stamp Works | 29 55 |
| | | F. D. Sargent | 8 35 |
| | | O. A. Quayle | 135 27 |
| | | Western Union Telegraph Co | 11 43 |
| | | Medical Review of Reviews | 3 00 |
| | 3. | G. A. Birch | 3 05 |
| | 14. | J. G. Myers | 9 97 |
| | | Western Union Telegraph Co | 7 87 |
| | | Hudson River Telephone Co | 19 60 |
| | | Leo Brothers & Co | 7 50 |

| | | | |
|---|---|---|---|
| 1901 | | | |
| May | 14. | O. A. Quayle | $75 27 |
| | | F. D. Sargent | 6 50 |
| | | H. W. Riggs | 13 00 |
| | 15. | Daniel Lewis | 6 00 |
| | | Albany Hardware and Iron Co | 3 00 |
| | 27. | The Diamond Paste Co | 60 |
| | | O. A. Quayle | 87 18 |
| | 31. | Banks & Co | 1 50 |
| | | G. A. Birch | 3 15 |
| | | Western Union Telegraph Co | 5 55 |
| | | Lang Stamp Works | 4 98 |
| | | O. A. Quayle | 226 69 |
| June | 1. | T. S. Buck | 1 93 |
| | | Hudson River Telephone Co | 15 90 |
| | 30. | G. A. Birch | 2 90 |
| | | National Press Intelligence Co | 15 45 |
| | | P. J. Henzel | 5 00 |
| | | University of State of New York | 5 22 |
| | | Sampson, Murdock & Co | 3 00 |
| July | 1. | Western Union Telegraph Co | 8 07 |
| | 22. | Hudson River Telephone Co | 14 49 |
| | 27. | T. S. Buck | 1 03 |
| | 31. | Hudson River Telephone Co | 9 70 |
| | | G. A. Birch | 3 15 |
| | | Western Union Telegraph Co | 8 69 |
| Aug. | 13. | Walker & Gibson | 1 35 |
| | 15. | Capital City News Co | 6 90 |
| Sept. | 5. | G. T. Diamond | 3 52 |
| | | G. A. Birch | 3 15 |
| | | United Typewriter Co | 50 |
| | | Western Union Telegraph Co | 5 34 |
| | 23. | W. H. Williams & Son | 3 75 |
| | | Hudson River Telephone Co | 18 12 |
| | | Lang Stamp Works | 1 95 |
| | | George G. Champlin | 2 10 |

| | | | |
|---|---|---|---|
| 1901 | | | |
| Sept. | 23. | O. A. Quayle | $138 71 |
| | | O. A. Quayle | 243 12 |
| | | Library Bureau | 230 40 |
| | | | $4,216 42 |

## CANCER LABORATORY

| | | | |
|---|---|---|---|
| 1901 | | | |
| June | 30. | Pay-roll for June | $841 66 |
| July | 15. | Pay-roll for July | 528 32 |
| | 31. | F. A. Payne | 7 35 |
| | | Bell Telephone Co | 35 75 |
| | | Weed & Co | 2 20 |
| | | G. E. Stechert | 7 16 |
| | | Mrs. Webber | 15 60 |
| | | National Carbonic Gas Co | 2 50 |
| | | S. O. Barnum & Son Co | 75 |
| | | George Townsend | 16 48 |
| | | I. P. Lyon | 2 89 |
| | | Neubeck & Myers | 6 00 |
| Aug. | 31. | Pay-roll for August | 333 33 |
| Sept. | 30. | Pay-roll for September | 333 33 |
| | | | $2,133 32 |

# PLANS

FOR

# SYSTEMS OF SEWERAGE

AND

# SEWAGE DISPOSAL

APPROVED DURING 1901

# AVON, N. Y.

### Extension of sewers

A map of a new sewer along Main street to replace an old wooden sewer was approved by the State Commissioner of Health on December 11, 1901, and forms Plate A of this report.

# BROCKPORT, N. Y.

### Original sewer plans

Plans for an original and complete system of sewerage and sewage disposal were approved by the State Commissioner of Health on May 14, 1901, and comprise a general contoured sewer map of the village, forming Plate B of this report, a general plan of disposal works forming Plate C of this report, and a sheet of sewer details not reproduced.

Also the following report of the designing engineers:

## REPORT

ROME, N. Y., *April*, 1901

The village of Brockport, Monroe county, N. Y., is on the Niagara Falls line of the New York Central and Hudson river railroad, a few miles west of Rochester and about nine miles south of Lake Ontario. It is also on the line of the Erie canal, which passes through the village on the north side of the business center. The village as incorporated covers about two square miles, and has an estimated present population of about 4000 people. The national census of 1890 gave a population of 3742, a decrease of 297 over that given for 1880.

The village is supplied with water by the system supplying both the villages of Brockport and Holly; the supply is by pumping to a standpipe, and the consumption is said to be small. There are two small spring streams passing through a portion of the village and through culverts under the Erie canal, one culvert being near the easterly side of the built-up portion of the village, and the other culvert being near the westerly side near Beach street. Main street, running nearly north and south through the village, is for the larger portion of the village lying south of the Erie canal a natural divide, the surface drainage running generally naturally from it to the two streams above mentioned. The westerly stream receives the overflow from a waste-weir of the Erie canal, and passes thence easterly and then northeasterly through the village limits. The easterly stream unites with the westerly one about one-half a mile north of the village and midway between East avenue, which forms its northerly line, and the settlement of Clarkson. The water from these streams thence runs in its natural course northeasterly through the settlement of Clarkson, and thence onward to Lake Ontario, which it enters by a course of about 14 miles through a small arm of Lake Ontario called Braddock bay. In running to the lake it passes through no incorporated village. It is one of the numerous branches forming Salmon creek. The stream under discussion depends largely for its maintenance upon the overflow of the Erie canal at the before mentioned weir and upon the natural leakage of the canal. The amount of water received from these two sources is generally quite large, and, in fact, has been used as a water-power immediately below the point of proposed disposal of the sewage for Brockport, where there is a dam but recently destroyed. However, inasmuch as this stream is reduced to a small one at certain periods of the year and especially so in winter, we have not considered it advisable to recommend the emptying of the crude sewage of the whole or a larger part of the village of Brockport into it, and have hence prepared treatment plans. We believe a considerable portion of the village might sewer into this brook for

several years without any material nuisance being created, but do not believe it expedient to do so to any great extent. We have investigated other available streams and find that the same objections obtain as to this one, with the added one that their distance away would increase materially the cost of the system. It will be noticed by an examination of the maps covering the territory near Brockport that a ridge running nearly east and west, about two miles to the south of Brockport, forms the southerly end of the watershed of numerous streams running in a general direction to the north or northeast, and the streams are hence necessarily quite small.

In view of the above we have prepared the plans for the piping system in such a way that the sanitary sewage from the southerly part of the village is carried under the Erie canal through the aforesaid culverts, and thence, as shown on the map, to a point down the brook as described about one-quarter of a mile north of the northerly line of the village. It is here that we recommend the construction of works for treating the sewage.

The water of this brook not being used below the proposed point of disposal for a water supply, it cannot be said that a high degree of purification is necessary, but that the sewage should be treated in such a manner that the effluent be non-obnoxious and create no nuisance in the stream below. Such a stream passing through a municipality of the size of Brockport cannot be considered as of unexceptionable purity at the best. It would not be considered sufficiently fit for potable uses, and if the sewage effluent does not render it offensive to the senses, you are doing all that can be reasonably expected of you in your treatment of the sewage.

We have considered the matter of treating the sewage chemically as well as by other processes, and believe that the plan which we herein recommend is one which will be satisfactory in its operation and economical in its construction as well as in its maintenance. The method proposed is that of sedimentation and septic action in a covered tank, followed by intermittent filtration over coarse material and final sedimentation in a settling basin.

The favor with which the sedimentation and septic tank i being received, both here and in England, is evidenced by th reports and expressions of opinion constantly being made upo its future.

The sewage as it is received from the village enters the tan through pipe into the two grit chambers, overflowing these int the tank proper. This tank has a capacity of 125,000 gallons or one-half of the estimated amount of sewage which will b furnished by your village at the end of the first period of abou 10 years. This tank is 24 feet wide by 100 feet long and i covered. The sewage is drawn from the opposite end of it an below the surface. It is consequently, assuming the rate o flow through the tank to be uniform, in the tank 12 hours with the maximum flow at the rate of 250,000 gallons per day This 12 hours is expected to suffice for proper sedimentatio and a sufficient anaerobic bacterial action. The Englis practice is that it should be in the tank 24 hours, but i is shown that the effluent if it remains so long in the tank i very offensive, and experiments appear to show that the effluen is so highly charged with anaerobic bacteria as to be inimica to the life of the aerobic bacteria of the filter beds.

It has been found that effluent from such a tank rapidly clog a fine filter, and in time reduces the void capacity of a fairl coarse filter to about two-thirds of its original capacity.

In a report on sewage disposal at Leeds, England, by Willian T. Hunt, chairman of the New Jersey state sewerage commis sion, it is stated that it has been found practicable to wor coarse continuous filter beds for long periods at a rapid rat of filtration, and that although some of the solids are retaine in the filter and there accumulate, they can be washed out. I states that continuous filtration over very coarse material ha given remarkable results if the solids in suspension which com out in the effluent are settled after filtration, and that thes solids are nonputrescible and can be readily settled, and tha their being dried does not give rise to evil odors, and that i would seem that the coming through of these solids, which ar

for the most part not further reducible and largely mineral, insures a permanence of the beds. It is also stated in that report that neither continuous nor intermittent filtration gives rise to evil odors and both give excellent chemical analyses, while the effluent improves and does not deteriorate in keeping.

While there is some precedent for much smaller sedimentation and septic basins than here proposed, notably the one in use at Champaign, Ill., where but one hour is required for the sewage to pass through it, inasmuch as it is easier to remove the sludge from the basin than from the filter beds, and also because more bacterial action will take place up to certain limits the longer the sewage is in the tank, we have designed this plant with a basin of one-half day's flow.

English experiments indicate that such basins do not require cleaning more than about once a year, and this is borne out by recent results of practice in this country.

The filter beds as proposed are designed to work as stated above intermittently and to be operated automatically from the regulation chamber. The capacity needed which they are intended to filter is at the rate of about one and one-quarter million gallons per acre per 24 hours. There are four filter beds, and by the automatic regulation it is intended that while one is being filled, another shall be standing full, a third shall be emptying and the fourth shall be standing empty, and thus each bed will be empty for about one-quarter of the time; the variation in flow will affect somewhat this operation, but it is expected that the average periods of rest for the various filters will be the same.

The effluent from the settling basin is intended to be drawn directly to the brook. A drain is also provided for this basin which connects with the drain from the grit chambers, and which is to be used for cleaning out the basin and tank and grit chambers.

The great objection to the operation of filters by the method here proposed is the opalescence of the filtered sewage when a filter is *first opened for drawing* off. This opalescence soon dis-

appears as the flow continues. This objection should be entirely done away with by the use of the settling basin as here proposed.

The minimum diameter of sewer adopted for the system is eight inches and the maximum grade for that size is three-tenths of a foot in 100 feet, giving a carrying capacity at the rate of one-half million gallons per day.

The table below gives the minimum and maximum grades in per cent for the various sizes of pipe contemplated and the capacities for the minimum grades. The general village map will show where these capacities occur. For intermediate grades it may be stated that doubling the grade increases the carrying capacity approximately 50 per cent:

| Size | Minimum grade | Approximate capacity | Maximum grade |
|---|---|---|---|
| 8 | 0.3 | 500,000 | 6.0 |
| 10 | 0.2 | 700,000 | 0.4 |
| 12 | 0.2 | 1,100,000 | 0.3 |
| 15 | 0.15 | 1,500,000 | 0.7 |
| 18 | 0.12 | 2,200,000 | 0.12 |

A consideration of the above table with the village map shows to one acquainted with the probable amounts of sewage required that the sizes proposed are ample for all future needs, although the 8-inch size so largely predominates. The natural grades in the village are generally excellent, and consequently the cost of the system is materially reduced by the small sizes of pipe needed. Cellars are generally well elevated and consequently comparatively shallow trenches are necessary, and help toward a low cost of the system.

There are many places on the system where the minimum size, 8-inch pipe, is theoretically much too large for the requirements, and it is hence contemplated to use flush tanks upon the upper ends of these lines to automatically empty and thus flush the system. The admission of roof water into the sewers is not contemplated, but might be allowed in a few places for flushing

the upper ends, or until such a time as the use of those sewers would render unnecessary the admission of the roof water. Any permit to connect a roof with the system should contain a clause giving the village the right at any future time to require the connection to be severed. A number of lampholes are designed for the system, into each of which a hose can be inserted if necessary for flushing. These lampholes are used in the place of manholes for inspection purposes to save expense. The flush tanks are also designed to have an overflow which answers the purpose of a lamphole. Through the manholes there is obtained at any time perfect inspection of the entire bore of the sewers, since either a manhole or lamphole is placed at every change of grade or alignment, and no two lampholes without a manhole between them.

For the maximum rates of grade as designed the velocity of the sewage when the sewers are running one-third full will be over two feet per second, except in the case of the 10-inch pipe with a grade of .2 of a foot in 100 feet on Graves street. This line is a short one, and it is expected that the sewer will be kept clean by flushing. The velocity in this line would be nearly two feet per second.

All sewers are intended to be of vitrified tile pipe.

The existing storm sewers are shown separately upon the sewer map and also the proposed storm sewers. It is considered advisable on account of the necessary treatment of the sewage to keep the storm water from the sanitary sewers. The village is well adapted for surface drainage directly into the little brooks by short lines, and generally the surface water can be carried in the street gutters to those streams, and where it can be so carried for a village of the size of Brockport it is desirable to do so.

An attempt has been made in designing the system to provide for cellar drainage where such is needed, and for that purpose levels were taken of the lowest cellars and their elevations are shown on the profiles, and an inspection of them will show that cellar drainage can be effected. There are a few places where

it was evident that it would not be practicable to undertake to drain the cellars, but such places are very few in number. The expense of providing drainage for these few would have been unwarranted if not unnecessary.

The need of a system of sewerage in Brockport is very great. The State normal school, with about 800 students, has no sewerage facilities, and they are greatly needed for the health of the students as well as on account of the nuisance created by such a concentrated population as the school forms. The westerly brook where it crosses Erie street, between Perry and Beach streets, was at the time the surveys for the system were in progress operating as an open sewer and at that point had a scum of nearly two inches in thickness of putrid matter emitting a foul odor. It would be an unusual sight to see its equal within the residential part of any village in the state. This brook continued across the canal and down to near Liberty street in a very filthy condition as an open sewer. Very foul odors were observed elsewhere in the village—odors which indicated a lack and a need of an efficient sewerage system. It is to be wondered that there has not been greater complaint to the health authorities for the abatement of the nuisance, and that the village has gone so long without the conveniences and necessities that most other villages of the size of Brockport have had either in whole or in part.

Respectfully submitted.

KNIGHT & HOPKINS

## DEPEW, N. Y.

### Changes and additions

The original plans for the sewer system of the village of Depew were approved by the State Board of Health on June 30, 1896, and appear in the 17th annual report. Certain changes in the original plans were approved by the Board on December 31, *1896, and on April* 28, 1897, and appear in the 18th annual report.

Further changes were approved on January 28, 1898, and appear in the 19th annual report, and still others were approved by the State Board of Health on February 23, 1899, and appear in the 20th annual report. On July 10, 1900, the State Board of Health approved plans for a system of sewage disposal works, and on September 20, 1900, it approved plans for still further changes in the street system of sewers.

On July 25, 1901, the State commissioner of health approved plans for "changes and additions" in the street system, which comprise a map of the changes forming Plate D of this report, and four sheets of profiles forming Plates E, F, G, and H of this report.

## ONEIDA, N. Y.

### Changes of sewer system

The original plans for the sewer system of the village of Oneida were approved by the State Board of Health on April 7, 1892, and appear in the 13th annual report of the Board. Subsequent changes have been approved by the Board on June 1899, and appear in the 17th, 18th, 19th and 20th annual reports respectively.

On September 27, 1901, the State commissioner of health approved a plan for a change of the system as to location. This change is represented by the map forming Plate I of this report.

## PLATTSBURG, N. Y.

### Complete sewer plans

Some old sewers have been in existence in Plattsburg for many years. On January 28, 1898, the State Board of Health approved plans for an extension of the sewers.

Plans for a complete system of sewers for the northern district of the village were approved by the State commissioner of health on July 29, 1901, and for the southern district on December 3, 1901.

These plans comprise: For the northern district, i. e., north of the Saranac river, a contoured sewer map of certain old existing sewers and the proposed new sewer system, forming Plate J of this report; a descriptive report by the designing engineer, hereto appended; a set of specifications for the construction of the sewers of the southern district, hereto appended. For the southern district, i. e., south of the Saranac river, a contoured sewer map showing existing old sewers and the proposed new sewer system, forming Plate K of this report; three sheets of street sewer profiles forming Plates L, M and N of this report; an outline street map of the entire village and vicinity with lake front, bearing the approval clause of the State commissioner for the entire southern district plans and forming Plate O of this report; an outline map of the watershed of the Saranac river, forming Plate P of this report; a descriptive report by the designing engineer, hereto appended; a set of specifications governing the construction of the sewers of the southern district, not appended.

## PLAN FOR THE IMPROVEMENT AND EXTENSION OF THE SEWERAGE SYSTEM OF THE VILLAGE OF PLATTSBURG, N. Y.

### *Northern Section*

#### AREA AND POPULATION

The village of Plattsburg is situated on the western shore of Lake Champlain, at the mouth of the Saranac river, which passes nearly through the center of the area now comprised within the village limits. The boundary of the village was much extended by chapter 353 of the laws of 1901 and now circumscribes an area of about five and a half square miles.

This is exclusive of the area covered by the Saranac river, which extends for a distance of about three and one half miles through the village and has an average width of about 250 feet. The population of the present village is not known with exactness, since the limits are not now the same as at the time of the last census. The population of the entire township (which measures 14 miles from east to west and eight miles from north to south and has an area of 42 square miles) is largely comprised within the village limits. The township population has increased, as shown in the following table:

| Year | Population of township | Population of village |
|---|---|---|
| 1850 | 5,618 | ..... |
| 1855 | 6,080 | ..... |
| 1860 | 6,680 | ..... |
| 1865 | 7,195 | ..... |
| 1870 | 8,414 | ..... |
| 1875 | 8,788 | ..... |
| 1880 | 8,283 | ..... |
| 1890 | 9,500 | 7,010 |
| 1892 | 10,022 | ..... |
| 1900 | ..... | 8,434 |

The village has apparently increased almost exactly 20 per cent in its population during the 10 years from 1890 to 1900.

It is not probable that the present farming character of a large portion of the village area will be changed in many years. The average density of population over the entire 3500 acres of area of the village amounts to about two and one half persons to the acre.

In the most populous portions of the northern section of the village a future population of 45 to the acre may be attained.

## NORTHERN SECTION

The topography of the village is such that drainage of various sections must be independently considered. The following plan

is for the northern section and comprises an area of about 400 acres, with a population which will not exceed about 6000 persons for many years to come, as the most densely populated as well as the largest section of the village is that lying south of Cornelia street. The entire area lying north of Cornelia street is about 1100 acres, but it is all sparsely settled farming land, with the exception of about one third of the 400 acres comprised in the present plan.

### RAIN WATER CARRIED IN THE SEWERS

The maps accompanying this report will render the foregoing observations more intelligible and will also show that sewers already exist in most of the streets. The roof and house drainage and ground and storm water from the streets and lots is admitted to all the old sewers.

### OLD SEWERS

The old sewers are without definite plan, adequate depth or regular grades. They have no manholes or other facilities for observation, no lampholes and no means for flushing. The storm-water inlets admit the street washings to the sewers, no catch pits being provided. There are no means of ventilation except that provided by the untrapped storm-water inlets, and possibly by untrapped house drains. The old sewers have been dug up at over 60 different places in order to ascertain the facts shown on the plans and profiles.

The present outlet of most of the old sewers is at the foot of Boynton avenue, in flat and marshy land bordering the lake. This is a very undesirable point of discharge for foul sewage, but the overflow in heavy rains may be discharged at this place without creating any nuisance.

### COMBINED SYSTEM ADOPTED

It is impracticable to renovate the entire system of old sewers at the present time, and it is inadvisable to attempt to exclude all the rain water since in some of the streets the land is very flat.

The unpaved streets and irregular ditches retard the flow of the water, rendering the adjoining lots very wet at times. In planning the new sewers, therefore, it was deemed advisable to admit a certain amount of the rainfall and at the same time to keep the sewers so small that the dry-weather flow would maintain sufficient velocity to render them self-cleaning. To promote this end the new receiving basins are designed to hold the detritus from the streets and thus prevent the sediment from accumulating in the sewers and retarding their flow.

### AMOUNT OF RAINFALL TO BE PROVIDED FOR

In estimating the quantity of water to be carried by the sewers a rainfall of two and one-half inches over the tributary watershed was assumed, with slopes of 15 in 1000 for the latter. It was also assumed that for many years the population would not exceed in density 15 to the acre. In proportioning the main sewers it was assumed that 15 per cent of the rainfall run-off, as computed from the Bürkli-Ziegler formula, would reach the sewers. The pipe sewers for the laterals are computed for a more liberal amount of run-off.

It was found possible to maintain a grade of not less than .64 per cent on the mains, and the largest size needed was 38 inches circular. Projected sewers are not represented on some of the streets shown in broken lines. The layout of these streets is somewhat conjectural and they have not yet been dedicated as public thoroughfares. To provide for such possible streets, however, the laterals have been placed at considerable depth, as indicated on the profiles, and their size has been proportioned for the drainage of the tributary areas.

### WATER SUPPLY

Plattsburg is provided with a water supply from tributaries of the Saranac river by gravity. Almost all the houses are connected with the mains. The amount of water used is not known, but it is not metered and the consumption is very liberal. The

dry-weather flow from the northern section under consideration, with good house drains and plumbing, may amount to as much as one cubic foot per second, at which rate a velocity of 2.85 feet per second would be maintained in an eight-inch pipe.

### IRON EIGHT-INCH OUTLET PIPE

The outlet, designed as shown on the plans, is through about 1000 feet of submerged cast-iron pipe. To keep this free from deposit a certain velocity of flow is essential, hence it has been kept down to eight inches in size, which, it is believed, will maintain a self-cleansing velocity even with the smallest dry-weather flow, since this will be supplemented by a certain amount of ground water. In times of rain the outlet will soon be overcharged, but not till the first foul water has passed off, and the comparatively clean flow will then be allowed to seek a natural outlet at a culvert near the junction of Boynton and Cumberland avenues. The means of accomplishing the separation of the storm water from the dry-weather flow is shown in the drawings. It is evident that the outlet pipe may be allowed to run under a small head without detriment and with a certain amount of advantage from the temporarily increased velocity, which will tend to keep it free of deposits of sediment and from obstructions at its outer end. The outlet is designed to be carried out into the lake for a distance of 1000 feet, to a point where the water is 6 feet in depth in low-water periods and from 11 to 12 feet when the lake level is high. At the point of exit the prevailing winds produce a current of sufficient strength to spread the sewage and rapidly dilute it. The lake water is not used for potable purposes, and the location of the outlet is far removed from all habitations.

### PREVIOUSLY APPROVED PLANS

In preparing this plan those previously submitted to and approved by the State Board of Health have been carefully studied; they were rendered impracticable on account of the financial difficulty found in extending Bailey avenue or Riley

avenue. The present plan is more definite as to its location of outlet and greater pains have been taken to secure the rapid dilution of the sewage, by means of the extended outlet, while the aggregate cost has been kept down by the use of an eight-inch pipe for the foul water discharge. At the same time the main sewers are more liberal in size than in the previous plans, while the storm-water overflow renders it possible to reduce the size of the outlet, as already explained.

## FLUSHING

It has not been thought desirable to use self-acting flushing tanks in connection with the proposed sewers. To be effective with sewers on the combined system the tanks would have to be of liberal size and a considerable number would be required.

Both the old and the new sewers can be flushed by portable carts, as for many years in use at New Haven, Conn., or by portable tanks as used in Antwerp, Belgium. The latter are of iron, weighing 1320 pounds, and they discharge their contents of 105 cubic feet in five seconds, producing a very strong and effective flush. These iron tanks cost about $400 each. Flushing by such means is economical of water and is quite effective, owing to the rapid flow that may be created.

The village can ill afford the amount of water that would be needed for the operation of automatic tanks, and the cost of such tanks would be very considerable, while a more effective flushing can be economically obtained by the means indicated.

## VENTILATION

The ventilation of the new sewers will be secured by the use of perforated manhole heads and the retention of many of the present untrapped storm-water inlets. The sewers are to be laid in straight lines between manholes and lampholes to permit of ready inspection and thorough cleaning.

## *Final Disposal of the Sewage*

### DILUTION

The present plan for the disposal of the dry-weather flow of sewage is that of dilution. The bay into which the sewage is discharged is two miles wide at the sewage outlet, and the depth of water at the termination of the outlet is six feet. The experience of many localities has shown that a minimum flow of seven cubic feet per second will render the sewage of 1000 persons quite inoffensive and unnoticeable. A possible future population of 6000 persons in the area considered in the present plan would require a flow of 42 cubic feet per second, a flow easily obtained by the slightest motion of the lake, and usually far exceeded. To insure a satisfactory dilution, however, the outlet has been extended from the point shown on the plans previously approved by the State Board of Health, only 50 feet from high-water mark, to a point 950 feet further into the lake. At the termination of the outlet there is a current of from two to four miles per hour to the north.

### TREATMENT BY SEPTIC TANKS AND FILTRATION

To guard against the remote contingency of a very great and unexpected increase in the population, or from any other occasion of the disposal by dilution proving unsatisfactory, a plan has been devised for the purification of the sewage by the use of septic tanks combined with filtration over an area of three or more acres.

An area of three acres will purify the effluent from the septic tanks, even with a daily dry-weather flow of 1,200,000 gallons.

The proposed plan is, briefly, to intercept the dry-weather flow at Boynton avenue and Margaret street and to carry it northerly along Margaret street and thence westerly to vacant lands that can be obtained for the purpose and are remote from the settled portion of the village. The sewage would there be raised by pumping, admitted to the septic tanks and then allowed to flow out to the filters, and after being thus purified

to pass by gravity back to Boynton avenue at its intersection with Cumberland avenue, whence the highly purified effluent would pass through the outlet as at present planned and be discharged 1000 feet out into the lake.

If, however, the effluent should be deemed sufficiently pure, after the bacterial action in the septic tanks combined with that in the filters, it might not be thought inadvisable to admit it into the lake at a point nearer to the filters.

HORACE ANDREWS

*Engineer for the Plattsburg improvement commission, 51 State street, Albany, N. Y.*

## SPECIFICATIONS FOR SEWERS AND APPURTENANCES TO BE CONSTRUCTED IN THE VILLAGE OF PLATTSBURG, N. Y.

### DESCRIPTION

Specifications for constructing about three miles of sewers in the north section of the village of Plattsburg, N. Y., comprising an outlet of cast iron pipe eight (8) inches of interior diameter, to be laid under water; a main sewer in Boynton avenue of vitrified bricks, with sewers of vitrified pipes in other streets, together with all appurtenances necessary thereto.

### REPAIRS

All the sewers, appurtenances, pavement or street surfacing disturbed, and work herein provided for shall be kept in good condition and repair by the contractor for a period of one year from the date of its acceptance by the commission; and in case the contractor neglects or refuses to repair said sewers, appurtenances and work herein provided for after five days notice from the commission, the said commission will cause said work to be done, and charge the expense thereof to the contractor or his sureties; and the commission will retain, for the period of one year from the date of said acceptance, five per cent of the amount due or to become due, under the contract, and shall, by such contract, have the right to pay the expense of said repairs

and restoration on the certificate of the engineer, out of the five per cent retained by said commission, or to collect such cost and expense from such contractor or his sureties.

### DAMAGE TO PERSON OR PROPERTY

The commission shall be held blameless for any damage to person or property arising from neglect on the part of the contractor, or those in his employ, or from the action of the elements. In order to prevent accidents, necessary watchmen shall be employed, and proper barricades shall be put up and kept up each day at the ends and sides of the excavations and streets, and more especially at night; and the contractor shall place sufficient lights at or near the work, and keep them burning from sunset till sunrise. All loss or damage arising from the action of the elements, or from any cause, to be sustained by the contractor. The contractor expressly covenanting and agreeing that, in the event of any damage resulting from the work or its progress, or from any matter or thing connected therewith or arising therefrom to any person or property, he will pay and liquidate the same at his own expense, and assume the liability therefor; and in the event of any action or actions being brought against the commission by reason of, or on account of, or growing out of said work or its construction, or anything connected therewith, the said contractor will, at his own expense, defend the same, and will pay any judgment recovered therein, and will, in all respects, fully indemnify and save harmless the said commission, its officers, agents and representatives, from any and all costs, expense, payment or judgment, to be recovered or incurred in such action or actions. And the commission shall retain from the contract price such sum as shall enable it to pay the amount of any claim for damages resulting from any such accident, and the costs and disbursements of any suit brought against the commission therefor, until the validity of any such claim shall be established, and, if established, the same shall be paid from the amount so retained; otherwise such amount shall be paid over to the contractor.

### PAYMENT

Payments will be made monthly equal to seventy (70) per cent of the amount of work done at contract prices, on the certificate of the engineer.

The contractor hereby agrees that the commission shall be and is hereby authorized to retain out of the money payable to the contractor under this agreement, the sum of thirty (30) per cent on the amount of the contract, and to expend the same in the manner hereinafter provided for; namely:

To retain twenty-five (25) per cent for the space of thirty (30) days after the completion of the work, and to retain the remaining five (5) per cent for the period of one year, as hereinbefore stipulated, and to expend the same in repairing said work, or in finishing and completing any work left unfinished by the contractor.

And it is further agreed that the said commission may hold and retain said sum for the time above mentioned as a guarantee that said work has been faithfully performed, and as an indemnity against any and all claims and demands against said commission by reason of said work.

### PROPOSALS

All proposals must be made upon the printed blanks furnished by the commission and must be accompanied by cash or a certified check for the amount of $500, which will be forfeited to the commission should the proposer be awarded the contract and fail to execute said contract and furnish the necessary bond within ten (10) days after the date of said award.

The right to reject any and all bids is reserved; and the right to relet the work is also reserved, unless the same proceeds to the satisfaction of the commission.

### TIME FOR COMMENCEMENT AND FOR COMPLETION

The contract is to be signed by the person or persons to whom it is awarded within 10 days from the time of such award.

The work is to be commenced on or before five days from the date of the signing of the contract and to be completed within ninety (90) days thereafter.

### FORFEITURE FOR NON-FULLFILLMENT

It is mutually agreed that if the contractor fails to complete and finish the work upon the date above named, he shall pay to the commission fifty ($50) dollars for each day the finishing and completion of such contract shall be delayed, together with the sum which shall accrue and become due for the inspector's wages for each and every day that the time of the inspector may exceed the said stipulated time for completion, which sums are hereby agreed upon as stipulated damages, and not as a penalty, and shall be deducted from the amount due by the terms of the contract: *Provided,* however, that in case of justifiable delay the commission shall have the right to extend the time for the completion of said work, with the remission of either one or both of the above-mentioned sums agreed upon as stipulated damages, during the time of said extension.

### INSPECTOR

The commission reserves the right of appointing an inspector, whose duty it shall be to inspect all materials and work, and to prevent any deviation from the specifications; the contractor will not be thereby relieved of his obligation to supervise the work and to fulfill to the letter the terms of the contract. If the inspector should be absent or negligent, or should consent to the allowance of inferior work, the contractor will not be thereby excused from repairing his work and removing faulty materials at his own cost.

### INCOMPETENT OR DISORDERLY MEN TO BE DISCHARGED

If any person employed by the contractor on the works be disobedient, or appears to the engineer to be incompetent or disorderly, or if such person uses threatening or abusive lan-

guage to any official having supervision of the work, he shall be discharged immediately upon the requisition of the engineer, and shall not again be employed on the works.

### GRADES AND LINES

The contractor shall provide, at his own expense, such forms, spikes, stakes, nails, etc., and such assistance as may be required by the engineer in giving lines, grades, etc., and his marks shall be carefully preserved. Any failure to do so will be considered a direct violation of this contract. All work during its progress and on its completion shall conform truly to the lines and levels given by the engineer, and shall be built in accordance with his plans and directions given from time to time.

### REJECTED MATERIALS AND IMPERFECT WORK

All materials furnished which, in the opinion of the engineer, or the inspector in charge of said work, shall not be in accordance with these specifications or plans, shall be removed by the contractor within 24 hours after he shall have been notified so to do by any one of said persons. Any unfaithful or imperfect work that may be discovered before the final acceptance of the work shall be corrected immediately, and any unsatisfactory materials delivered shall be rejected on the requirement of the engineer, notwithstanding that they may have been overlooked by the proper inspector. All work of any kind which, during its progress and before it is finally accepted, may become damaged from any cause, shall be broken up and removed and replaced by good and satisfactory work.

### MODIFICATIONS OF WORK

It is distinctly understood by the parties to this contract that alterations in the work herein contemplated may be made by the engineer, either before or after the commencement of construction. If such alterations diminish the quantity of work to be done, they shall not constitute a claim for damages or for anticipated profits on the work that may be dispensed with;

if they increase the amount of work, such increase shall be paid for according to the quantity actually done and at the price established for such work, as agreed upon in the contract.

### FROST

No mason work of any description shall be laid at any time during freezing weather, except by written permission of the engineer, and with such precautions as he may require. No earth embankment or refilling shall be made while there is sufficient frost to prevent perfect work.

### DEPTH

The grade line shown upon the profiles in all cases indicates the bottom of the inside of the pipes forming the sewers. All excavation below the bottom of the outside of the pipes that may be necessary when a foundation of timber, planking or concrete is ordered by the engineer must be made by the contractor without extra charge therefor.

### VITRIFIED PIPE

The sewer shall be made, where vitrified pipes are to be used and as shown on the plans, of vitrified stoneware sewer pipe, circular in shape, with socket joints. The area of the pipe shall not be less than that of a circle of the specified diameter, and no variation from the specified diameter shall exceed one-half an inch. No pipe shall be used, except for curves, that varies from a straight cylinder more than three-eighths of an inch in two feet. The pipes shall, in all cases, fit the hubs properly, and no chipping to fit pipes will be allowed. The pipe must be vitrified on the inner and outer surfaces, smooth, without warps or cracks; in strength or quality it must be equal to the best Akron, Ohio, or St. Louis, Mo., vitrified salt-glazed sewer pipe. All pipes of 18 inches, or over, in interior diameter must be of extra heavy or "double strength" vitrified pipe having the thickness of shell not less than one-twelfth of the interior diameter, and with extra deep hubs, both hub and spigot ends to be corrugated to increase the adhesion of the mortar.

## GAS AND WATER PIPES

All water, sewer or gas pipes across or near the work shall be supported during the construction of the work under or near them, so as not to interfere with or delay the use of said pipes or obstruct the flow of water, sewerage or gas.

## CONNECTIONS

The sewer pipe must be properly connected with all house and side drains, street drains and sewers, and the connections shall not be covered until examined and approved by the inspector. All house drains, whether crossing the contractor's trenches or terminating in an adjacent parallel sewer that is to be abandoned for the new sewer constructed by the contractor, must be connected with the latter at the Y branches. A six-inch bend and as much six-inch pipe as may be necessary for the purpose must be furnished and laid by the contractor for each connection. The contractor shall furnish and drive, in the presence of the inspector, a substantial stake opposite each Y branch and near the curb line, where practicable. Y branches will not be measured in by the engineer, nor included in his estimates, unless their positions are indicated by stakes, as described above.

## EXCAVATION OF TRENCH AND FOUNDATIONS

The ground shall be excavated in open trenches to the necessary depth and width, but not to exceed one hundred and fifty (150) feet of trench shall be opened at any one time beyond and in advance of completed sewer without the consent of the commission. The excavation at the joints shall be at least six (6) inches outside of the joints to enable them to be perfectly cemented. If rock is encountered it must be stripped, and will then be measured by the engineer. Such rock and boulders exceeding ten (10) cubic feet in volume, that are met in the trenches and removed, will be paid for at the rate of two dollars and fifty cents ($2.50) per cubic yard.

### FOUNDATION AND SHEET PILES

When it shall be deemed necessary by the engineer, the pipes shall be laid on a foundation of cement concrete, of materials and proportions hereinafter specified, which will be paid for at the rate of six dollars ($6) per cubic yard. Upon quicksand beds or upon very soft ground, cradles or cribs of the required shape and strength shall be used in which the sewer pipe shall be laid. In running quicksand or other treacherous ground, close sheet piling, with the necessary stringers, braces, dog irons, etc., must be used, and the sand must be kept from running into the pipes. Sheet piling and bracing, used for supporting the sides of excavations, will not be paid for unless the engineer directs, in writing, that the same shall be left in the trenches for the purpose of protecting adjacent buildings or the street pavement from settlement. All timber and planking used in foundations or otherwise, where directed, will be paid for at the rate of eighteen dollars ($18) per thousand feet B. M. The bottom of the trench must be carefully graded between every two adjacent grade stakes for the entire distance between such stakes before any pipes are laid upon the section thus graded.

### PUMPING AND CARE OF WATER

The contractor shall, at his own expense, pump or otherwise remove any water which may be found or shall accumulate in the trench, and shall form all dams or other work necessary for keeping the excavation and sewer pipe clear of water during the progress of the work. He shall in no case lay vitrified pipes or brick or stone masonry in water. In effecting the drainage, the water shall not be allowed to flow over the invert of the sewer, except under special conditions for protecting the work, approved by the engineer. In all cases where permission is given to allow water to flow through the pipe, all joints on the lower half of the pipe must be well covered with clay on the inside of the pipe; and the flow of water must be checked as much as possible. When the trench is left for the night, or the

pipe-laying is stopped by rain storms or any other cause, the ends of the sewer must be closed with tight plugs or with screens sufficiently fine to prevent the entrance of the material that is being excavated.

### BRANCHES

Pipes having six (6) inch Y branches, and hubs moulded thereon for house connections, shall be furnished and laid at such points opposite each lot front, at an average distance of fifty (50) feet, as the engineer may designate, or at such points and distances as he may otherwise direct. Each Y branch must be closed with a vitrified cover and cement. One ten (10) inch Y branch must be furnished and laid for each receiving basin. No Y branch or sewer connection of any kind shall be covered from sight until a stake shall have been driven opposite it.

### JOINTS

All the joints of the pipes shall be packed with cement mortar made of one part by measure of Rosendale hydraulic cement of the best quality, and one part by measure of clean sharp sand. The sand and cement shall be mixed thoroughly while dry, and afterwards formed into a paste with clear water. All excess of mortar must be carefully kept or removed from the inside of the pipe. The contractor may use a gasket of tarred oakum pressed into the joint around the entire circumference of the pipe to prevent the entrance of cement to the inside of the pipe. Under no circumstances shall the joints of the pipes be laid dry or packed with clay. Wherever the diameter of the pipe is fifteen (15) inches, or more, the joints are to be filled and neatly pointed from the inside of the pipe as well as from the outside.

### BEDDING

Clean, dry earth, free from stones, shall be well and thoroughly packed under and around all the pipe, and to a height of one (1) foot above its top. All pipe shall be laid in a straight

line, evenly and smoothly bedded, fitted and jointed. No walking must be permitted on or over the line of pipe until at least one foot of earth shall be packed over the top of the pipe. Suitable excavation must be made at each hub to allow the pipe to have a firm bearing for its entire length.

### BACK-FILLING AND EMBANKMENT

Each nine (9) inches in depth of the back-filling shall be thoroughly pounded as the filling progresses, and the surface of the ground must be left at its original level. The pipes must in all cases be covered with at least four (4) feet in depth of earth, measured above the highest part of the pipe. Where embankment is required, it must be formed with a level surface not less than three (3) feet in width on top, and with side slopes of one and one-half (1½) base to one (1) vertical.

### PAVEMENT AND SIDEWALKS

All pavement and roadways disturbed must be restored and relaid with materials of the quality and the same depth as that used on the pavement or roadways before removal. The pavement or roadways must be thoroughly pounded, rolled or otherwise consolidated and left in perfect condition.

All flagging and bricks on sidewalks disturbed by the contractor must be relaid in as good manner as before disturbance, and all flagging or other material broken or injured by the contractor must be replaced with new and whole material similar in quality to that broken by him.

### MANHOLES

Manholes shall be constructed in conformity with the plans furnished by the engineer and at such places as he may direct. They shall be built of eight (8) inch brickwork, entirely of headers, worked up to within 10 inches of the street grade, or to the height directed by the engineer. The bricks shall be new and whole, burned hard entirely through, free from injurious cracks and with true even faces. Every brick must be thor-

oughly wet by immersion immediately before laying, and must be laid in full mortar joints, on bottom, sides and ends; for each brick this is to be performed in one operation. The upper four (4) feet of each manhole are to be of hard vitrified paving brick.

Cement mortar must be used of the quality hereinafter specified.

The manholes shall be circular in section, four and one-half (4½) feet in inside diameter at the bottom and of the form and dimensions shown on the drawings. Cast iron steps similar to the pattern or drawings in the office of the engineer, or wrought iron rods, as may be directed by the engineer, are to be built into the brickwork and conveniently arranged to allow access to the sewer. The steps are to be five courses of brick apart. The invert of the sewer at the manhole shall, whenever practicable, be formed of vitrified pipe, carefully cut in half, lengthwise, and imbedded in cement mortar made with only one-half of the proportion of sand used on the brickwork, or one part of neat cement to one part of sand. Wherever several pipes unite at one manhole the bottom shall be of hard brick plastered over with cement mortar just described. The exterior surface of all manholes shall be neatly plastered with cement mortar, their interior surfaces shall be brushed with a wash of cement and water. Manholes are to be fitted with cast iron frames and covers that shall conform in dimensions and weight to the drawings which are on file in the office of the engineer. The manhole covers, excepting those on the sidewalks, are to be perforated for ventilation, and in all cases are to be of the dimensions shown in the drawings. The iron used is to be sound, free from imperfections, thoroughly cleaned and coated with tar.

### LAMPHOLES

Lampholes are to be constructed in conformity with the plans furnished by the engineer. Each lamphole shall consist of one cast iron lamphole head, weighing about one hundred and fifteen (115) pounds; one five-foot length of extra heavy eight (8) inch

soil pipe; one or more two-foot lengths of eight (8) inch vitrified pipe, and one eight (8) inch T branch on the main sewer, all furnished and set as shown in the drawings.

### RECEIVING BASINS

Receiving basins shall be built where shown on the plan of the work, or at such points as the engineer shall, during the progress of the work, determine and direct. The basins shall be constructed as shown on the plans on file at the office of the commission, and each part shall be of the size and materials designated on said plans.

### CEMENT MORTAR

Cement mortar, wherever used upon the work, shall be composed of the best quality of Rosendale hydraulic cement and black sand, mixed thoroughly while dry in the proportion of one part, by measure, of cement to two parts, by measure, of clean sharp sand, free from loam; a sufficient quantity of water must be added to the mixed cement and sand to form a rather stiff paste; it must be used within an hour after mixing, and not at all if once set.

No cement shall be hauled upon the work until accepted by the engineer in regard to its brand and its quality. All cement must be protected from the weather and kept dry. Should the engineer require the substitution of Portland for Rosendale hydraulic cement, the difference in cost at current market prices shall be allowed the contractor as an extra.

### CONCRETE

Concrete shall be composed of Rosendale cement mortar, proportioned and mixed as before described, to which shall be added broken stone or hard brick in such proportion that the resultant mass will contain for every one part, by measure, of cement in the mortar four (4) parts, by measure, of broken stone or brick. Clean, broken stone or brick shall be used, not exceed-

ing two inches in greatest dimension, and shall be thoroughly freed from dust and dirt, after which it shall not be deposited or handled except upon clean boards.

### RUBBLESTONE MASONRY

Rubblestone masonry shall, when directed, be used as shown in the drawings, and for any other parts that may be designated during the progress of the work. It shall be composed of blue or gray limestone of sound and durable quality; it must, whenever practicable, be laid on its natural bed. The stones used shall present a good bed for materials of that class; they must be bedded and laid in Rosendale cement mortar, and their size shall vary according to the part of the work where they are to be used. The stones must not be less than four (4) inches in thickness and must have not less than one superficial foot of bed, except the spalls necessary to fill up the interstices. The headers must be in all cases of sufficient size to secure a strong bond with the rest of the masonry. No spalling up under a stone after it is laid will be allowed.

### RAILROAD TRACKS

In the progress of the work the contractor will be required to preserve from obstructions all railroad tracks which may be affected by the prosecution of the work herein described, and also to afford the necessary facilities to the company or companies owning said tracks, or to their agents, in the preservation of the same from injury, without extra charge therefor.

### REMOVAL OF SURPLUS EARTH

Surplus earth or rock from the sewer trenches shall be removed by the contractor and shall be deposited where directed by the engineer, but in no case will the removal of surplus earth from trenches in ungraded streets be required to a greater extent than may be necessary to leave the surface in a reasonably smooth *and safe condition.*

### CLEANING OUT

On the completion of the sewers, manholes, lampholes, house drains and other appurtenances, they shall be thoroughly cleaned out before the final acceptance by the commission. Unless otherwise directed a stream of water shall be brought from the hydrants, or by means of barrels, into the upper end of each section of sewer built, through the finished lampholes or manholes, and all dirt washed out must be removed from the manholes; such flushing must be continued till the sewers are cleaned to the satisfaction of the engineer.

### VITRIFIED BRICKS

The bricks used for sewers, and for receiving basins and manholes where specified, shall be side-cut, vitrified paving bricks, new, whole and of the best quality, to have straight and square edges and not to absorb more than three (3) per cent of their weight of water after 24 hours immersion therein.

Repressed bricks are not required; if used they must be without rounded edges. The bricks are to be satisfactory to the engineer in every respect. For the sewer, bricks molded or cut to radius are to be used in such number as may be shown on the cross-sections of the sewer, unless the use of such molded bricks shall be dispensed with by written direction of the engineer.

### BRICK SEWER AND BRICKWORK

All bricks used, except vitrified bricks, are to be thoroughly wet by immersion with at least five (5) minutes soaking immediately before laying. This requirement as to immersion is to be strictly followed; no sprinkling or mere dipping into water will be allowed as a substitute.

If required by the engineer every second course of bricks in the sewer must be laid with a line. The beds must be in the lines of the radii for arch work.

Joints, on the inside, must not exceed three-eighths ($\frac{3}{8}$) of an *inch. The brick*work of the arches shall be properly bonded

and keyed, as directed by the engineer. The lower course in the bottom of receiving basins may be set dry and afterwards grouted, but in no other place is this procedure to be used.

Vitrified six-inch slants shall be built into the wall of the sewer at such points as may be directed for house drains, and similar ten-inch slants are to be used for receiving basin outlets. The slants must be procured, already made, from the dealers in vitrified pipe. Pipes chipped or beveled by hand to answer the purpose of slants will not be allowed.

Six-inch slants are to be set at the rate of two for each lot on each side of the sewer and are to be covered with vitrified covers and cement. The prices for all slants in the brick sewer are to be included in the price bid for the sewer.

All of the common or building bricks used are to be hard and of the best quality of new and whole bricks, burned hard entirely through, free from injurious cracks or pebbles, or quick-lime, and with true and even faces.

In laying the bricks the best skilled mechanics only shall be employed.

Proper moulds, centers and forms must be furnished and kept in good condition by the contractor.

The brick sewers shall conform in shape and dimensions to the cross-sections shown on the plans on file in the office of the commission. All unfinished work must be racked back, and when new work is joined to it, the bricks must be scraped, thoroughly cleaned, and well moistened. All the joints of the inner surface of the inverted arch shall be smoothly and properly struck, and all joints on the interior of the sewer shall be scraped, pointed and left in a neat condition. The crown of the arches shall be properly keyed with stretchers, and the joints well filled with cement mortar. The whole of the brick masonry of the sewer and appurtenances to be laid in cement mortar, made as hereinafter specified. The outside of the upper arch of the sewer in all sections to be neatly plastered with cement mortar.

The walls of the brick sewers are to be of one ring, or four inches, in thickness.

### STORM-WATER OVERFLOW

A storm-water overflow is to be built at or near the intersection of Boynton and Cumberland avenues, in conformity with the detail drawings and the directions of the engineer.

### IRON OUTLET PIPE

From high water to a point about 1000 feet easterly therefrom an eight-inch cast iron pipe is to be laid into Cumberland bay of Lake Champlain.

This pipe is to be of sound and perfect cast iron, free from cracks, but may be of a quality that is rejected for the ordinary purposes of water pipes.

It must be cleaned and coated with asphaltic mixture, as for water pipes, and the pipes must be leaded and have water-tight joints. A trench must be dug or dredged for the reception of the pipe, which must be well covered with sand and afterwards with riprap of broken stone, as directed by the engineer.

The outer end of the pipe for a distance of about 75 feet is to be slightly and gradually raised above the bottom and to be protected by suitable riprap, and other means if so directed by the engineer.

Coffer dams are not required, but the pipes may be temporarily supported by means of piling or by floating with empty barrels.

Iron pipe may have a thickness of shell equal to the minimum employed in the water supply of cities or villages, but not to be less than three-eighths of an inch.

The thickness must be practically uniform, but a slight variation will be allowed.

### EXTRA WORK

All work done by written order of the engineer, and for which no special price is bid, or fixed in the contract, will be paid for in accordance with its actual, reasonable cost to the contractor, and determined by the engineer, plus fifteen (15) per cent of said cost.

## PRICES

All proposals will be rejected as informal unless made upon the blanks provided at the office of the commission.

Contractors will bid as follows, stating the prices bid both in figures and in writing:

The measurement of lineal feet of vitrified pipe will be taken along the center line of the pipe. Where the inverts are of split pipe, but not otherwise, the diameter of all manholes will be included as pipe laid. Except where there is a special price bid, the price paid for all curves, slants and extra fittings will be sixty per cent of that given in the price lists of dealers in vitrified pipe for the current year.

| | |
|---|---|
| The price per lineal foot for furnishing the materials, excavating the trenches and laying the 38-inch circular vitrified brick sewer with four-inch walls | 2010 lineal ft. |
| The price per lineal foot for furnishing the materials, excavating the trenches and laying the 8-inch cast iron outlet pipe, to be laid under water | 1000 lineal ft. |
| The price per lineal foot for furnishing the materials, excavating the trenches and laying the 27-inch circular vitrified brick sewer with four-inch walls | 1230 lineal ft. |
| The price per lineal foot for furnishing the materials, excavating the trenches and laying the 30-inch circular vitrified brick sewer with four-inch walls | 1340 lineal ft. |
| The price per lineal foot for furnishing the materials, excavating the trenches and laying the 24-inch extra heavy vitrified pipe | 612 lineal ft. |
| The price per lineal foot for furnishing the materials, excavating the trenches and laying the 15-inch vitrified pipe | 4790 lineal ft. |

| | |
|---|---|
| The price per lineal foot for furnishing the materials, excavating the trenches and laying the 12-inch vitrified pipe..... | 1900 lineal ft. |
| The price per lineal foot for furnishing the materials, excavating the trenches and laying the 10-inch vitrified pipe..... | 2690 lineal ft. |
| The price per lineal foot for furnishing the materials, excavating the trenches and laying the 8-inch vitrified pipe ..... | 20 lineal ft. |
| The price per lineal foot for furnishing the materials, excavating the trenches and laying the 6-inch vitrified pipe for house connections.... | 400 lineal ft. |
| The price of each Y branch on the 24-inch extra heavy pipe, including the two feet of pipe upon which it is molded, and vitrified cover..... | 15 lineal ft. |
| The price for each branch on the 15-inch pipe, including the two feet of pipe upon which it is molded, and vitrified cover ..... | 233 lineal ft. |
| The price for each branch on the 12-inch pipe, including the two feet of pipe upon which it is molded, and vitrified cover ..... | 24 lineal ft. |
| The price for each Y branch on the 10-inch pipe, including the two feet of pipe upon which it is molded, and vitrified cover ..... | 143 lineal ft. |
| The price for the storm-water overflow complete, as shown in the drawings ..... | 1 |
| The price for each manhole, complete..... | 27 |
| The price for each lamphole, complete..... | 6 |
| The price for each receiving basin, complete, including its proper setting, and the furnishing and laying of sufficient 10-inch pipe to connect the basin with the sewer,. together with one 10-inch Y branch on the main sewer for each basin ..... | 24 lineal ft. |

PRICES FIXED IN THE CONTRACT

For each cubic yard of rubblestone masonry, laid in cement mortar, where ordered by the engineer, six dollars ($6).

For each thousand feet, B. M., for timber required in foundations, where ordered by the engineer, eighteen dollars ($18).

For each cubic yard of rock cutting or per cubic yard for boulders of more than ten cubic feet volume, two dollars and fifty cents ($2.50).

For each cubic yard of concrete made of broken stone and cement mortar, where ordered by the engineer, six dollars ($6).

For all extra work done by written order of the engineer, and for which no price is herein fixed, the actual, reasonable cost of such work to the contractor, as determined by the engineer, plus fifteen (15) per cent of said cost.

It is hereby understood, intended and declared that the above bids are for furnishing all materials and labor necessary for the full and perfect completion of all the work in all its parts as required by and in accordance with these specifications.

At the option of the commission the construction of the sewers in Platt, Elm and St. Charles streets, or in any one of said streets, will be omitted upon written notification being given to the contractor to such effect within 30 days from the date of the signing of the contract.

OFFICE OF THE ENGINEER

51 STATE STREET, ALBANY, N. Y., *July* 8, 1901

I certify the above to be a copy of the specifications prepared by me, together with an approximate estimate of the quantities for the work therein named.

HORACE ANDREWS

*Engineer improvement commission, village of Plattsburg, N. Y.*

## PLAN FOR THE IMPROVEMENT AND EXTENSION OF THE SEWERAGE SYSTEM OF THE VILLAGE OF PLATTSBURG, N. Y.

### *Southern Section*

The main facts relating to the area and population of the village, with the methods used for proportioning the sewers, have already been given in the report relating to the drainage of a part of the village, described for convenience as the "northern section."

Portions of the village south of the most populous and central district will be considered in this report as comprising the southern section, although streets lying on both sides of the Saranac river are included in this designation.

There is less clay in the section under consideration than in the northern section, but the land is in many places quite as flat and the subsoil is apt to be saturated with water. The natural drainage for this section, as well as for the central portion of the village, is into the Saranac river, which now receives sewer discharges in over 20 different places. An investigation has therefore been made as to the probable flow of the river and as to whether the sewerage discharged into the river is liable to occasion a nuisance. The river water is not used for potable purposes.

The portion of the river within the village limits has a considerable fall, which is partially developed and made serviceable as a source of power for various manufactories.

The small map, on a scale of 1 inch to 666 feet, accompanying this report, shows the location of the dams and the rate of fall of the river. All the old sewers have been exposed by digging and have been systematically located. The grades of the old sewers are shown on the profiles, while their locations, sizes and points of discharge are indicated on the large maps of the northern and southern sections.

## WATERSHED OF THE SARANAC RIVER

Since gagings of the river extending over a period of years are not in existence, the flow must be deduced from the rainfall and the area of the watershed, employing the percentages of run-off that have been shown to hold in respect to other and similar rivers. Rainfall statistics are not available for many points on the watershed, but those obtained for the past 31 years at the United States barracks at Plattsburg have been kindly furnished to the commission and are herewith appended in tabular form. For the purpose of comparison, the fluctuations in the surface of Lake Champlain, as observed between 1870 and 1900 at Rouse's Point, are also given in connection with the rainfall. These statistics relating to the lake surface heights are, prior to 1896, from the report of the Deep Waterways commission of 1896. The table is brought up to 1900 by means of a record of gage readings subsequent to 1895 furnished by the courtesy of Capt. Harry Taylor, United States corps of engineers, who is in charge of the federal work at Rouse's Point.

## AREA OF THE WATERSHED

The topographical work of the United States geological survey is not yet completed over the watershed of the Saranac river, and the best map available is that given in the atlas of the state of New York by Julius Bien & Co. An outline map of the river and its tributaries has been prepared from the data referred to, and is annexed to this report. A careful measurement of the watershed, from the map, shows a land area of 591.7 square miles and a water area of 25.9 square miles.

## FLOW OF THE SARANAC RIVER

Mr. Emil Kuichling has made an exhaustive examination relative to the flow of streams and the proportion of the rainfall that can be regarded as available in the run-off of the rivers of this state. His deductions are given in appendix 8 of the "Report on the *barge canal from* the Hudson river to the Great

lakes, February 12, 1901." From table No. 3, as given on page 803 of the report above cited, the estimated run-off for the Saranac river has been deduced.

It is fair to assume that the watershed now under consideration, being largely wooded, will be apt to have a more uniform run-off than the territory for which Kuichling's table was designed, for that region has been denuded of its woods for a great portion of its area. Under the assumption of a given rainfall, run-off and area, the average flow in cubic feet per second has been computed for the several months of the year and is shown in the appended table. Allowance for evaporation must also be made from the area of 25.9 square miles of exposed water surface comprised within the watershed. Mr. Kuichling's values for evaporation from water surface of reservoirs, expressed in inches, are as follows:

| | |
|---|---|
| January | .65 |
| February | .75 |
| March | 1.40 |
| April | 2.80 |
| May | 3.90 |
| June | 5.10 |
| July | 5.70 |
| August | 5.40 |
| September | 4.20 |
| October | 3.20 |
| November | 1.60 |
| December | 1.30 |

These have been used in the computation of the table here given and the run-off as reduced by the amount of estimated evaporation is shown.

The apparently negative value of the flow for the month of September for the dryest year, 1887, would indicate that too large an allowance has been made for evaporation, or what is more probable, that the run-off from this watershed may safely be regarded as somewhat greater than here assumed.

*Table showing probable flow of Saranac river*

| MONTH | Average Year: Rainfall | Average Year: Run-off | Average Year: Run-off in cubic feet per second on 617.6 square miles | Average Year: Evaporation from 25.9 square miles | Average Year: Run-off in cubic feet per second deducting evaporation | Driest Year (1887): Rainfall | Driest Year (1887): Run-off | Driest Year (1887): Run-off in cubic feet per second on 617.6 square miles | Driest Year (1887): Evaporation from 25.9 square miles | Driest Year (1887): Run-off in cubic feet per second deducting evaporation | Month |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches | Inches | | | | Inches | Inches | | | | |
| January | 2.26 | 1.35 | 723.2 | 14.6 | 708.6 | 1.56 | 1.07 | 573.2 | 14.6 | 558.6 | January |
| February | 1.61 | 1.56 | 925.2 | 18.7 | 906.5 | 1.66 | 1.73 | 1,026.1 | 18.7 | 1,007.4 | February |
| March | 2.07 | 2.77 | 1,483.9 | 31.5 | 1,452.4 | 1.78 | 2.60 | 1,392.8 | 31.5 | 1,361.3 | March |
| April | 1.58 | 1.96 | 1,084.9 | 65.0 | 1,019.9 | .37 | 1.19 | 658.7 | 65.0 | 593.7 | April |
| May | 2.31 | 1.23 | 658.9 | 87.8 | 571.1 | .40 | .64 | 342.8 | 87.8 | 255.0 | May |
| June | 2.81 | .78 | 431.7 | 118.3 | 313.4 | 2.26 | .69 | 381.9 | 118.3 | 263.6 | June |
| July | 3.42 | .44 | 235.7 | 128.3 | 107.4 | 2.03 | .30 | 160.7 | 128.3 | 32.4 | July |
| August | 3.49 | .49 | 262.5 | 121.5 | 141.0 | 2.20 | .34 | 182.1 | 121.5 | 60.6 | August |
| September | 2.69 | .50 | 276.8 | 97.4 | 179.4 | .51 | .17 | 94.1 | 97.4 | —3.3 | September |
| October | 2.30 | .51 | 273.2 | 72.0 | 201.2 | 1.24 | .34 | 182.1 | 72.0 | 110.1 | October |
| November | 2.61 | .84 | 464.9 | 37.1 | 427.8 | 3.14 | 1.03 | 570.1 | 37.1 | 533.0 | November |
| December | 1.98 | 1.17 | 626.8 | 29.3 | 597.5 | 1.76 | 1.09 | 583.9 | 29.3 | 554.6 | December |
| Year | 29.10 | | | | | 18.91 | | | | | Year |

## CONFORMITY BETWEEN RUN-OFF AND LAKE SURFACE

The average discharge of the Saranac river, as deduced by the method indicated, shows a conformity with the average lake surface that is not observable in the rainfall. To enable this conformity to be clearly seen a diagram is appended showing the average Saranac river discharge, the average rainfall at Plattsburg and the average height of the surface of the lake as observed at Rouse's Point.

## DILUTION OF SEWAGE

In the discussion of the propriety of discharging sewage into the Saranac river, a measure of the allowable dilution is of the first importance. Dr. Samuel Rideal, in an address delivered in 1899, remarks that:

"The purifying action of rivers is known to be very great. If suspended organic matter is slowly removed to the river bed and is there attacked, in the absence of air and light, by the organisms naturally fitted to the purpose, the products will dissolve and become available for the water bacteria in the river."

This view of the matter would indicate that the dams, which are numerous in the Saranac river at Plattsburg, may facilitate the purification of sewage discharged above them. Mr. Rudolph Hering gives a practical measure of the needed dilution (Eng. mag. July, 1898). As the result of his observations and inquiries he comes to the following conclusions:

"If the flow of a stream is less than 2½ cubic feet per second per 1000 persons discharging sewage into the same, an offense is almost sure to arise. When the flow is greater than 7 cubic feet per 1000 persons, offensive conditions are not likely to result. In other words, when the free ammonia contained in the water is greater than .1116, the conditions will probably be objectionable, and if it is less than .0399, it is not likely that the sewage in the water will be noticed. The disposal of sewage by dilution is therefore satisfactory in many places, the main condition being that at all times the flow of the stream receiving the sewage shall be sufficiently copious to so disperse and dilute it as to *prevent putrifaction* and substitute oxidation."

Mr. Hering considers that purification is promoted by low temperature, aeration, falls over dams and rapid descent of stream, all of which are characteristic of the Saranac river. He considers the effect of mill ponds to be disadvantageous, though Dr. Rideal's views as to purification do not seem to support him in this.

The fluctuation of water, which is very evident in the Saranac, Mr. Hering also considers unfavorable, while thorough and rapid dispersion, which is not obtaineed at some of the present outlets, he considers of essential importance.

### SEWAGE DISCHARGED INTO THE SARANAC RIVER

It is apparent that the flow of the river is almost always sufficient to furnish dilution of the sewage of a population of 10,000 persons (or double the number that is at present estimated to drain into it) at the rate of seven cubic feet per second per 1000 persons draining into the sewers. There may be exceptional months where the flow is too small to prevent a nuisance. In general, however, the present population could discharge its entire volume of sewage into the river without rendering the water offensive, if it were possible to secure a thorough mixing of the sewage with the river water. Unfortunately, the numerous dams, the broad river bed and the diversion of water by flumes at the manufactories, together with the improper location of the sewer outlets, often renders the mixture of sewage and water very imperfect. The present plan proposes to improve existing outlets into the Saranac river and to continue their use with a more thorough mingling of the sewage with the river water.

## PLANS FOR IMPROVEMENT IN METHOD OF SEWAGE DISPOSAL

### FIRST—DISCHARGE INTO LAKE CHAMPLAIN

It is believed that it will be quite possible to discharge the sewage from the small additional territory that it is proposed

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to drain by the new sewers shown on the maps directly into the current of the Saranac river and to cause it to mingle with the waters of the river so thoroughly as to obviate any nuisance. Still it would seem only a question of time as to the necessity of preventing the discharge of raw sewage into the river, and more especially that portion of the sewage that comes from the densely settled portion of the village and is now very improperly discharged into the river bed at poorly selected points, where its thorough dilution is not well attained.

In planning the new outlets therefor a preliminary study has been made of a method whereby the sewage now discharging into the Saranac river may be intercepted, as to its dry weather flow, and concentrated at a point on the east bank of the river near the point on the lake shore road where the barracks drainage now enters the river. From this point, where the river surface is about 26 feet above the average lake level, a tunnel is projected passing under the barracks at a depth of about 40 to 50 feet. This tunnel would be small, probably about four feet wide by seven feet in height; it would be about 1450 feet long and would probably be in the shaly rock which forms the river bed and which crops out at the lake shore.

The point on the lake shore where the tunnel would terminate would be one adjacent to deep water and remote from dwellings and very favorable to the rapid and efficient dilution of the sewage.

This plan is advocated for future adoption, when the needs of the village call for it, as the most economical and effective one. It is not dependent for its efficiency upon constant watchfulness and careful administration and is practically much less apt to occasion a nuisance than any method of treatment on land or by septic tanks with filtration. From a sanitary point of view the disposal of raw sewage by thorough dilution with fresh water that is not used for drinking is as perfect a method as is now known.

The tunnel plan, with dry-weather flow interceptors, would practically free the river from the drainage of the village. This

drainage is now almost entirely into the river and has been so discharged for many years. The continued growth of the village will sooner or later render the pollution of the river intolerable.

### SECOND—THE PURIFICATION OF THE SEWAGE WITH CONTINUANCE OF DISCHARGE INTO THE RIVER

As an alternative to the tunnel plan it would be practicable to concentrate the dry-weather flow at treatment works located on the south shore of the river between South Catherine street and the Peru road. This is the only available location for treatment works where the sewage now flowing into the river can be brought without pumping to a considerable height. The objections to the location proposed are principally of an economical nature—a valuable mill site would be occupied and considerable expenditure would be necessary to prepare suitable sewage filters, with or without septic tanks. Efficient and careful administration would also be required if the necessary filters, pumps and other appurtenances are to be maintained in a condition of sanitary usefulness. Raw sewage could continue to be discharged into the river at all times except during the months of July, August, September and October, and the cost of operating the treatment works could thus be materially reduced.

The outlets of the proposed new sewers have been so planned that the sewage at present discharged by them, provisionally, may be easily diverted into interceptors and removed by either of the two plans above outlined.

### POSSIBLE MODIFICATIONS OF THE PLANS INDICATED ON THE MAPS

The specifications for the work proposed in the southern section, which accompany this report, provide for the omission of the construction of some of the sewers at the present time, if it is thought that the construction would better be deferred.

Another modification that may be advisable is to divert the lake shore road drainage and bring it directly down the road

named to a point near the river bank, where the projected tunnel is shown.

This would allow the Elizabeth and Johnson streets and Peru road sewers to discharge with the lake shore road sewer. The point of discharge is as favorable as at South Catherine street, but the construction of a considerable stretch of sewer unavailable for local drainage would be involved.

Respectfully submitted.

HORACE ANDREWS

*Engineer of the Plattsburg improvement commission*

51 State street, Albany, N. Y., September 17, 1901.

*Rainfall at Plattsburg, N. Y. barracks and Lake surface at Rouse's Point, N. Y.*

| YEAR | JAN. | | FEB. | | MAR. | | APR. | | MAY | | JUNE | | JULY | | AUG. | | SEPT. | | OCT. | | NOV. | | DEC. | | YEAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A. D. | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake |
| | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. |
| 1870 ... | 2.79 | ..... | 2.34 | ..... | .58 | ..... | .69 | ..... | .39 | ..... | 2.81 | ..... | 1.91 | ..... | 1.31 | ..... | 2.34 | ..... | 2.70 | ..... | 1.29 | ..... | 1.26 | .... | 20.41 | ..... |
| 1.... | 1.13 | 2.02 | 1.27 | 2.13 | 3.63 | 3.95 | 3.98 | 4.45 | 1.73 | 4.28 | 1.34 | 2.70 | 4.65 | 1.80 | 3.48 | 1.56 | 1.15 | 1.94 | 1.95 | 1.45 | 1.09 | 1.50 | 2.32 | 1.91 | 27.72 | 2.47 |
| 2.... | .68 | 1.96 | 1.42 | 2.06 | 1.77 | 2.56 | .66 | 4.01 | 2.37 | 4.32 | 2.85 | 3.94 | 4.72 | 2.97 | 5.86 | 3.63 | 3.67 | 4.60 | 3.50 | 3.80 | 2.16 | 3.90 | 1.57 | 3.46 | 30.63 | 3.43 |
| 3.... | 3.26 | 3.23 | .36 | 2.99 | 3.70 | 2.76 | 2.08 | 5.99 | 1.20 | 6.49 | 2.01 | 4.15 | 4.90 | 2.50 | 2.02 | 1.81 | 1.85 | 1.03 | 5.15 | 1.38 | 3.94 | 2.17 | 1.93 | 3.15 | 32.40 | 3.14 |
| 4.... | 3.67 | 4.15 | 1.96 | 4.19 | 1.83 | 4.40 | 3.60 | 5.00 | 3.89 | 5.13 | 2.40 | 5.06 | 6.18 | 3.88 | 1.53 | 3.34 | 4.06 | 2.16 | 1.24 | 1.64 | 2.24 | 1.06 | 1.04 | .89 | 33.64 | 3.41 |
| 5.... | 2.21 | .72 | 1.16 | .74 | 2.55 | 1.59 | 1.56 | 4.38 | 3.11 | 4.91 | 1.86 | 3.57 | 3.14 | 2.44 | 3.35 | 1.80 | 3.18 | 1.42 | 3.51 | 1.74 | 1.92 | 2.59 | 1.13 | 2.31 | 28.68 | 2.35 |
| 6.... | 1.39 | 3.18 | 2.51 | 3.06 | 3.35 | 3.61 | 1.24 | 5.16 | .80 | 6.61 | 3.04 | 4.73 | 1.21 | 3.06 | .37 | 1.78 | 4.06 | .97 | 1.34 | .77 | .76 | .68 | 2.01 | .48 | 22.08 | 2.84 |
| 7.... | 2.01 | .46 | .22 | .54 | 1.68 | 1.47 | 2.08 | 4.36 | .75 | 3.89 | 1.85 | 2.43 | 5.07 | 2.22 | 3.72 | 2.00 | 2.09 | 1.56 | 3.68 | 1.39 | 1.71 | 2.22 | .85 | 2.60 | 25.71 | 2.10 |
| 8.... | 1.60 | 2.06 | .66 | 1.56 | 1.61 | 2.54 | 2.85 | 4.42 | 2.47 | 4.84 | 1.31 | 3.02 | 2.53 | 1.99 | 6.99 | 2.82 | 2.44 | 2.71 | 2.88 | 1.55 | 3.01 | 1.75 | 3.33 | 4.05 | 31.68 | 2.78 |
| 9.... | .87 | 3.32 | 1.01 | 2.70 | 2.02 | 3.01 | .48 | 4.44 | .18 | 6.00 | 2.53 | 3.73 | 2.52 | 2.50 | 2.81 | 1.64 | 2.03 | 1.02 | .46 | .66 | 2.86 | .81 | 2.88 | 2.24 | 20.65 | 2.67 |
| 1880.... | 1.75 | 2.33 | 1.69 | 3.06 | 1.21 | 3.56 | 1.27 | 3.88 | 1.49 | 3.54 | 2.02 | 2.33 | 2.00 | 1.51 | 1.65 | .87 | 2.43 | .31 | 4.54 | .15 | 2.67 | 1.70 | .89 | 1.47 | 23.61 | 2.06 |
| 1.... | 1.60 | 1.04 | 1.12 | 1.44 | 2.36 | 3.06 | .30 | 3.46 | 2.93 | 4.63 | 1.27 | 3.21 | 2.34 | 1.99 | 2.57 | 1.38 | 1.99 | .94 | 1.84 | .62 | 1.50 | 1.06 | 1.76 | 1.54 | 21.58 | 2.03 |
| 2.... | 1.06 | 2.55 | 1.96 | 2.37 | 2.70 | 3.80 | .86 | 3.50 | 1.70 | 3.26 | 4.78 | 3.89 | 2.22 | 3.01 | 2.01 | 1.86 | 4.72 | 1.25 | 1.04 | 1.13 | .54 | .63 | 1.69 | .30 | 25.28 | 2.30 |
| 3.... | .99 | .20 | 1.37 | .50 | 1.66 | 1.02 | .56 | 4.05 | 4.39 | 4.98 | 3.20 | 4.02 | 3.40 | 2.93 | 1.17 | 1.80 | 2.49 | .86 | 1.81 | .40 | 1.75 | .40 | .96 | .46 | 24.05 | 1.80 |
| 4.... | 1.88 | .58 | 1.84 | 1.58 | 3.49 | 3.30 | 1.08 | 5.68 | 2.29 | 5.30 | 1.60 | 3.63 | 1.98 | 2.05 | 2.19 | 1.63 | 1.69 | .63 | 2.42 | .48 | 2.03 | .70 | 1.26 | 1.45 | 23.75 | 2.25 |
| 5.... | 2.57 | 2.36 | 1.33 | 2.29 | .30 | 1.94 | 1.99 | 4.48 | 1.56 | 5.60 | 1.48 | 5.40 | 4.04 | 2.41 | 2.30 | 1.85 | 3.24 | 1.88 | 4.57 | 1.96 | 4.39 | 3.79 | 1.91 | 3.76 | 29.66 | 2.98 |
| 6.... | 1.15 | 3.84 | 1.22 | 3.58 | 1.42 | 3.43 | 2.06 | 5.20 | 1.48 | 4.39 | 4.72 | 3.06 | 3.77 | 2.05 | 3.97 | 1.39 | 2.36 | .83 | .76 | .84 | 2.30 | 1.48 | .17 | 2.82 | 25.38 | 2.74 |
| 7.... | 1.56 | 2.14 | 1.66 | 3.34 | 1.78 | 2.81 | .37 | 5.36 | .40 | 6.37 | 2.26 | 4.45 | 2.03 | 2.91 | 2.20 | 1.94 | .51 | 1.19 | 1.24 | .58 | 3.14 | .47 | 1.76 | 1.87 | 18.91 | 2.79 |
| 8.... | .59 | 2.12 | .20 | 2.20 | 1.95 | 2.77 | 1.27 | 5.40 | 3.20 | 6.57 | 1.88 | 4.51 | 1.12 | 2.77 | 5.23 | 1.72 | 3.76 | 1.93 | 2.98 | 2.43 | 3.90 | 3.38 | 5.63 | 3.65 | 31.71 | 3.29 |
| 9.... | 3.70 | 4.41 | .33 | 3.64 | .88 | 3.13 | 1.70 | 4.62 | 2.83 | 4.47 | 4.17 | 3.98 | 5.62 | 3.41 | 1.43 | 2.76 | 4.25 | 1.85 | 3.34 | 2.36 | 2.57 | 3.52 | 2.03 | 3.32 | 32.85 | 3.37 |
| 1890.... | 2.90 | 3.04 | 2.40 | 3.58 | 2.68 | 4.30 | 1.46 | 4.76 | 4.40 | 5.72 | 3.35 | 5.27 | 4.04 | 3.07 | 5.83 | 1.86 | 2.87 | 3.13 | 2.92 | 3.01 | 2.27 | 3.12 | 2.45 | 2.88 | 37.57 | 3.65 |
| 1.... | 2.30 | 2.71 | 1.60 | 3.58 | 2.65 | 5.30 | 2.28 | 6.31 | 1.97 | 5.23 | 1.49 | 3.13 | 3.77 | 1.94 | 3.55 | 1.43 | .93 | 1.16 | 2.07 | .61 | 1.67 | .50 | 2.88 | 1.13 | 27.16 | 2.75 |
| 2.... | 4.30 | 2.90 | 2.47 | 2.70 | 1.36 | 2.32 | .97 | 4.57 | 4.07 | 3.92 | 7.62 | 4.37 | 5.21 | 5.41 | 7.18 | 4.27 | 1.68 | 3.42 | 1.12 | 2.06 | 2.74 | 2.25 | 1.44 | 2.23 | 40.16 | 3.27 |
| 3 ... | .89 | 1.50 | 1.54 | 1.33 | .68 | 1.87 | 2.11 | 3.65 | 3.26 | 4.96 | 2.42 | 3.53 | 2.84 | 1.89 | 5.76 | 1.37 | 2.12 | 2.46 | .85 | 1.54 | 1.28 | .96 | 3.92 | .99 | 27.67 | 2.17 |
| 4.... | 2.04 | 1.93 | 1.37 | 1.99 | 1.91 | 3.04 | 1.41 | 3.93 | 4.14 | 3.30 | 3.52 | 2.72 | 2.52 | 1.88 | .89 | 1.03 | 2.79 | .59 | 3.98 | .56 | 2.82 | 1.06 | 2.55 | 1.11 | 29.94 | 1.98 |
| 5 ... | 2.07 | 1.31 | .70 | 1.20 | .74 | 1.23 | 2.79 | 4.01 | 2.89 | 4.86 | 3.85 | 3.13 | 2.15 | 1.76 | 4.50 | 1.26 | 2.85 | 1.13 | .45 | .60 | 5.13 | 1.00 | 2.40 | 2.67 | 30.52 | 2.01 |
| 6.... | 2.05 | 3.28 | 6.21 | 2.46 | 3.95 | 4.15 | .85 | 6.63 | 7.85 | 5.59 | 2.80 | 3.09 | 5.00 | 2.04 | 5.95 | 1.35 | 2.85 | .80 | 1.68 | .93 | 2.19 | 1.69 | .87 | 1.86 | 36.25 | 2.83 |
| 7.... | 2.98 | 1.47 | 1.43 | 1.34 | 2.26 | 2.12 | 2.67 | 4.93 | 3.41 | 5.58 | 3.90 | 4.99 | 7.19 | 4.42 | 3.93 | 4.20 | 1.90 | 2.61 | .52 | 1.54 | 3.58 | 1.91 | 1.96 | 3.33 | 35.73 | 3.22 |
| 8.... | 5.26 | 3.17 | 3.19 | 3.32 | 1.29 | 5.21 | 1.75 | 5.76 | 1.70 | 4.26 | 2.81 | 2.99 | 2.97 | 1.92 | 5.82 | 1.19 | 3.37 | .94 | 3.70 | 1.58 | 3.08 | 2.05 | 2.07 | 1.85 | 37.01 | 2.85 |
| 9.... | 2.70 | 2.16 | .35 | 1.86 | 2.65 | 2.91 | 1.00 | 4.83 | 2.52 | 5.49 | 1.85 | 3.06 | 3.30 | 1.87 | 5.28 | 1.05 | 5.71 | .52 | 2.15 | .38 | 1.77 | 1.66 | 1.74 | 2.28 | 31.02 | 2.40 |
| 1900.... | 4.13 | 2.23 | 3.16 | 3.21 | 4.28 | 3.66 | .83 | 5.65 | 2.38 | 6.16 | 4.21 | 4.30 | 1.79 | 2.53 | 3.24 | 1.76 | 2.14 | 1.14 | 1.00 | .97 | 8.72 | 1.46 | 2.78 | 3.01 | 28.66 | 2.96 |
| Mean | 2.20 | *2.24 | 1.61 | *2.33 | 2.07 | *2.93 | 1.58 | *4.60 | 2.31 | *4.94 | 2.81 | *3.68 | 3.42 | *2.57 | 3.49 | *1.95 | 2.69 | *1.64 | 2.30 | *1.35 | 2.61 | *1.67 | 1.98 | *2.11 | 29.10 | *2.67 |
| | ..... | †2.28 | ..... | †2.35 | ..... | †3.05 | ..... | †4.76 | ..... | †5.02 | ..... | †3.68 | ..... | †2.57 | ..... | †1.95 | ..... | †1.57 | ..... | †1.30 | ..... | †1.72 | ..... | †2.17 | ..... | †2.70 |

*Averages to 1895 inclusive. †Averages to 1900 inclusive.

named to a point near the river bank, where the projected tunnel is shown.

This would allow the Elizabeth and Johnson streets and Peru road sewers to discharge with the lake shore road sewer. The point of discharge is as favorable as at South Catherine street, but the construction of a considerable stretch of sewer unavailable for local drainage would be involved.

Respectfully submitted.

HORACE ANDREWS

*Engineer of the Plattsburg improvement commission*

51 State street, Albany, N. Y., September 17, 1901.

*Rainfall at Plattsburg, N. Y. barracks and Lake surface at Rouse's Point, N. Y.*

| YEAR | JAN. | | FEB. | | MAR. | | APR. | | MAY | | JUNE | | JULY | | AUG. | | SEPT. | | OCT. | | NOV. | | DEC. | | YEAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A. D. | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake | Rain | Lake |
| | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. | in. | ft. |
| 1870 ... | 2.79 | ..... | 2.34 | ..... | .58 | ..... | .69 | ..... | .39 | ..... | 2.81 | ..... | 1.91 | ..... | 1.31 | ..... | 2.84 | ..... | 2.70 | ..... | 1.29 | ..... | 1.26 | .... | 20.41 | ..... |
| 1.... | 1.13 | 2.02 | 1.27 | 2.13 | 3.63 | 3.95 | 3.98 | 4.45 | 1.73 | 4.28 | 1.34 | 2.70 | 4.65 | 1.80 | 3.48 | 1.56 | 1.15 | 1.94 | 1.95 | 1.45 | 1.09 | 1.50 | 2.32 | 1.91 | 27.72 | 2.47 |
| 2.... | .68 | 1.96 | 1.42 | 2.06 | 1.77 | 2.56 | .66 | 4.01 | 2.37 | 4.32 | 2.85 | 3.94 | 4.72 | 2.97 | 5.86 | 3.63 | 3.67 | 4.60 | 3.50 | 3.80 | 2.16 | 3.90 | 1.57 | 3.46 | 30.63 | 3.43 |
| 3.... | 3.26 | 3.23 | .36 | 2.99 | 3.70 | 2.76 | 2.08 | 5.99 | 1.20 | 6.49 | 2.01 | 4.15 | 4.90 | 2.50 | 2.02 | 1.81 | 1.85 | 1.03 | 5.15 | 1.38 | 3.94 | 2.17 | 1.93 | 3.15 | 32.40 | 3.14 |
| 4.... | 3.67 | 4.15 | 1.96 | 4.19 | 1.83 | 4.40 | 3.60 | 5.00 | 3.89 | 5.13 | 2.40 | 5.06 | 6.18 | 3.88 | 1.53 | 3.34 | 4.06 | 2.16 | 1.24 | 1.64 | 2.24 | 1.06 | 1.04 | .89 | 33.64 | 3.41 |
| 5.... | 2.21 | .72 | 1.16 | .74 | 2.55 | 1.59 | 1.56 | 4.38 | 3.11 | 4.91 | 1.86 | 3.57 | 3.14 | 2.44 | 3.35 | 1.80 | 3.18 | 1.42 | 3.51 | 1.74 | 1.92 | 2.59 | 1.13 | 2.31 | 28.68 | 2.35 |
| 6.... | 1.39 | 3.18 | 2.51 | 3.06 | 3.35 | 3.61 | 1.24 | 5.16 | .80 | 6.61 | 3.04 | 4.73 | 1.21 | 3.06 | .37 | 1.78 | 4.06 | .97 | 1.34 | .77 | .76 | .68 | 2.01 | .48 | 22.08 | 2.84 |
| 7.... | 2.01 | .46 | .22 | .54 | 1.68 | 1.47 | 2.08 | 4.36 | .75 | 3.89 | 1.85 | 2.43 | 5.07 | 2.22 | 3.72 | 2.00 | 2.09 | 1.56 | 3.68 | 1.39 | 1.71 | 2.22 | .85 | 2.60 | 25.71 | 2.10 |
| 8.... | 1.60 | 2.06 | .66 | 1.56 | 1.61 | 2.54 | 2.85 | 4.42 | 2.47 | 4.84 | 1.31 | 3.02 | 2.53 | 1.99 | 6.99 | 2.82 | 2.44 | 2.71 | 2.88 | 1.55 | 3.01 | 1.75 | 3.33 | 4.05 | 31.68 | 2.78 |
| 9.... | .87 | 3.32 | 1.01 | 2.70 | 2.02 | 3.01 | .48 | 4.44 | .18 | 6.00 | 2.53 | 3.73 | 2.52 | 2.50 | 2.81 | 1.64 | 2.03 | 1.02 | .46 | .66 | 2.86 | .81 | 2.88 | 2.24 | 20.65 | 2.67 |
| 1880.... | 1.75 | 2.33 | 1.69 | 3.06 | 1.21 | 3.56 | 1.27 | 3.88 | 1.49 | 3.54 | 2.02 | 2.33 | 2.00 | 1.51 | 1.65 | .87 | 2.43 | .31 | 4.54 | .15 | 2.67 | 1.70 | .89 | 1.47 | 23.61 | 2.06 |
| 1.... | 1.60 | 1.04 | 1.12 | 1.44 | 2.36 | 3.06 | .30 | 3.46 | 2.93 | 4.63 | 1.27 | 3.21 | 2.34 | 1.99 | 2.57 | 1.38 | 1.99 | .94 | 1.84 | .62 | 1.50 | 1.06 | 1.76 | 1.54 | 21.58 | 2.03 |
| 2.... | 1.06 | 2.55 | 1.96 | 2.37 | 2.70 | 3.80 | .86 | 3.50 | 1.70 | 3.26 | 4.78 | 3.89 | 2.22 | 3.01 | 2.01 | 1.86 | 4.72 | 1.25 | 1.04 | 1.13 | .54 | .63 | 1.69 | .30 | 25.28 | 2.30 |
| 3.... | .99 | .20 | 1.37 | .50 | 1.66 | 1.02 | .56 | 4.05 | 4.39 | 4.98 | 3.20 | 4.02 | 3.40 | 2.92 | 1.17 | 1.80 | 2.49 | .86 | 1.81 | .40 | 1.75 | .40 | .96 | .46 | 24.05 | 1.80 |
| 4.... | 1.88 | .58 | 1.84 | 1.58 | 3.49 | 3.30 | 1.08 | 5.68 | 2.29 | 5.30 | 1.60 | 3.63 | 1.98 | 2.05 | 2.19 | 1.63 | 1.69 | .63 | 2.42 | .48 | 2.03 | .70 | 1.26 | 1.45 | 23.75 | 2.25 |
| 5.... | 2.57 | 2.36 | 1.33 | 2.29 | .30 | 1.94 | 1.99 | 4.48 | 1.56 | 5.60 | 1.48 | 3.40 | 4.04 | 2.41 | 2.30 | 1.85 | 3.22 | 1.88 | 4.57 | 1.96 | 4.89 | 3.79 | 1.91 | 3.76 | 29.66 | 2.98 |
| 6.... | 1.15 | 3.84 | 1.22 | 3.58 | 1.42 | 3.43 | 2.06 | 5.20 | 1.48 | 4.39 | 4.72 | 3.06 | 3.77 | 2.05 | 3.97 | 1.39 | 2.36 | .83 | .76 | .84 | 2.30 | 1.48 | .17 | 2.82 | 25.38 | 2.74 |
| 7.... | 1.56 | 2.14 | 1.66 | 3.34 | 1.78 | 2.81 | .37 | 5.36 | .40 | 6.37 | 2.26 | 4.45 | 2.03 | 2.91 | 2.20 | 1.94 | .51 | 1.19 | 1.24 | .58 | 3.14 | .47 | 1.76 | 1.87 | 18.91 | 2.79 |
| 8.... | .59 | 2.12 | .20 | 2.20 | 1.95 | 2.77 | 1.27 | 5.40 | 3.20 | 6.57 | 1.88 | 4.51 | 1.12 | 2.77 | 5.21 | 1.72 | 3.76 | 1.93 | 2.98 | 2.43 | 3.90 | 3.38 | 5.63 | 3.65 | 31.71 | 3.29 |
| 9.... | 3.70 | 4.41 | .33 | 3.64 | .88 | 3.13 | 1.70 | 4.62 | 2.83 | 4.47 | 4.17 | 3.98 | 5.62 | 3.41 | 1.43 | 2.76 | 4.25 | 1.85 | 3.34 | 2.36 | 2.57 | 3.52 | 2.08 | 3.52 | 32.85 | 3.37 |
| 1890.... | 2.90 | 3.04 | 2.40 | 3.58 | 2.68 | 4.30 | 1.46 | 4.76 | 4.40 | 5.72 | 3.35 | 5.27 | 4.04 | 3.07 | 5.83 | 1.86 | 2.87 | 3.13 | 2.92 | 3.01 | 2.27 | 3.12 | 2.45 | 2.88 | 37.57 | 3.65 |
| 1.... | 2.30 | 2.71 | 1.60 | 3.58 | 2.63 | 5.30 | 2.28 | 6.31 | 1.97 | 5.23 | 1.49 | 3.13 | 3.77 | 1.94 | 3.55 | 1.43 | .93 | 1.16 | 2.07 | .61 | 1.67 | .50 | 2.88 | 1.13 | 27.16 | 2.75 |
| 2.... | 4.30 | 2.90 | 2.47 | 2.70 | 1.36 | 2.32 | .97 | 4.57 | 4.07 | 3.92 | 7.62 | 4.37 | 5.21 | 5.41 | 7.18 | 4.27 | 1.68 | 3.42 | 1.12 | 2.06 | 2.74 | 2.25 | 1.44 | 2.23 | 40.16 | 3.97 |
| 3.... | .89 | 1.50 | 1.54 | 1.33 | .64 | 1.87 | 2.11 | 3.65 | 3.26 | 4.96 | 2.42 | 3.53 | 2.84 | 1.89 | 5.76 | 1.37 | 2.12 | 2.46 | .85 | 1.54 | 1.28 | .96 | 3.92 | .99 | 27.67 | 2.17 |
| 4.... | 2.04 | 1.93 | 1.37 | 1.99 | 1.91 | 3.04 | 1.41 | 3.93 | 4.14 | 3.30 | 3.52 | 2.72 | 2.52 | 1.88 | .89 | 1.03 | 2.79 | .59 | 3.98 | .56 | 2.82 | 1.06 | 2.55 | 1.11 | 29.94 | 1.98 |
| 5.... | 2.07 | 1.31 | .70 | 1.20 | .74 | 1.23 | 2.79 | 4.01 | 2.89 | 4.86 | 3.85 | 3.13 | 2.15 | 1.76 | 4.50 | 1.26 | 2.85 | 1.13 | .45 | .60 | 5.13 | 1.00 | 2.40 | 2.67 | 30.52 | 2.01 |
| 6.... | 2.05 | 3.28 | 6.21 | 2.46 | 3.95 | 4.15 | .85 | 6.63 | 7.85 | 5.59 | 2.80 | 3.09 | 5.00 | 2.04 | 5.95 | 1.35 | 2.85 | .80 | 1.68 | .93 | 2.19 | 1.69 | .87 | 1.86 | 36.25 | 2.83 |
| 7.... | 2.98 | 1.47 | 1.43 | 1.34 | 2.26 | 2.12 | 2.67 | 4.93 | 3.41 | 5.58 | 3.90 | 4.99 | 7.19 | 4.42 | 3.93 | 4.20 | 1.90 | 2.61 | .52 | 1.54 | 3.58 | 1.91 | 1.96 | 3.33 | 35.73 | 3.22 |
| 8.... | 5.26 | 3.17 | 3.19 | 3.32 | 1.29 | 5.21 | 1.75 | 5.76 | 1.70 | 4.26 | 2.81 | 2.99 | 2.97 | 1.92 | 5.82 | 1.19 | 3.37 | .94 | 3.70 | 1.58 | 3.08 | 2.05 | 2.07 | 1.85 | 37.01 | 2.85 |
| 9.... | 2.70 | 2.16 | .35 | 1.86 | 2.65 | 2.91 | 1.00 | 4.83 | 2.52 | 5.49 | 1.85 | 3.06 | 3.30 | 1.87 | 5.28 | 1.05 | 5.71 | .52 | 2.15 | .38 | 1.77 | 1.66 | 1.74 | 2.28 | 31.02 | 2.40 |
| 1900.... | 4.13 | 2.23 | 3.16 | 3.21 | 4.28 | 3.66 | .83 | 5.65 | 2.38 | 6.16 | 4.21 | 4.30 | 1.79 | 2.53 | 3.24 | 1.76 | 2.14 | 1.14 | 1.00 | .97 | 8.72 | 1.46 | 2.78 | 3.01 | 28.66 | 2.96 |
| Mean | 2.20 | *2.24 | 1.61 | *2.33 | 2.07 | *2.93 | 1.58 | *4.60 | 2.31 | *4.94 | 2.81 | *3.68 | 3.42 | *2.57 | 3.49 | *1.95 | 2.69 | *1.64 | 2.30 | *1.35 | 2.61 | *1.67 | 1.98 | *2.11 | 29.10 | *2.67 |
| | ..... | †2.28 | ..... | †2.85 | ..... | †3.05 | ..... | †4.76 | ..... | †5.02 | ..... | †3.68 | ..... | †2.57 | ..... | †1.95 | ..... | †1.57 | ..... | †1.30 | ..... | †1.72 | ..... | †2.17 | ..... | †2.70 |

* Averages to 1895 inclusive. † Averages to 1900 inclusive.

The zero of the U. S. Engineer's gauge at Fort Montgomery, Lake Champlain, is 94.53 feet above mean tide at New York city.

Extreme low water, 94.39 feet. Extreme high water, 103.78 feet. Extreme depth, 402 feet (at latitude 44° 18′, longitude 73° 19′). Coast survey's plane of reference for soundings is 94.6 feet; its average lake level, 97.17 feet, which is the zero or datum plane of the improvement commission at Plattsburg.

August 8, 1901.

HORACE ANDREWS
*Engineer for improvement commission*

ENGINEERING SCHOOL OF UNION COLLEGE

SCHENECTADY, N. Y., *November* 23, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—In the matter of the sewer plans for the southern district of the village of Plattsburg, N. Y., which were submitted to me for examination with reference to your approval or disapproval of them, I beg to say that I went to Plattsburg for the purpose of examining the local conditions in conjunction with the plans and met Mr. Horace Andrews, the designing engineer of the system, and Hon. Smith Weed, who is chairman of the board of sewer commissioners. In company with Mr. Andrews I went over the whole of the territory to be sewered in the southern district and gave especial attention to the points of proposed discharge of the sewage into the Saranac river.

The general features of the sewer system proper as well as the details appear to have been worked out thoroughly and the well-known ability of the designing engineer stands as a guarantee in this particular. In the matter of the disposal of the sewage, however, I am of the opinion that although the discharge of the sewage from the district in question might possibly be done without creating very unsanitary conditions, still that fact is somewhat problematical in my opinion and any considerable increase in the volume of the sewage discharged over what will occur for the immediate present will, in my opinion,

create a nuisance and unwholesome and objectionable conditions. While therefore it does not appear desirable to allow this fact to interfere with the construction of the collecting system in the spring as contemplated, the general desirability of both avoiding further pollution of the Saranac river through the village and the outlet into the lake, and of securing some improvement in the conditions of the river and lake at this point, calls for some definite and substantial progress toward a more rational and improved form of disposal than crude discharge into the river and lake. I beg therefore to recommend that the plans submitted be approved so far as relate to the street system, and that the present points of discharge as indicated on the plans be approved for tentative and present use only, and that the village authorities be directed to proceed to complete definite plans for an improved system of sewage disposal and to submit the same for your consideration and their early adoption and installation; and further, that if it should appear from a further investigation that the engineer has yet made that the present points of discharge would not permit of being readily harmonized with such future system of disposal, that such changes in the location of proposed outfalls be submitted by the engineer as will permit of an economic adaptation of them to the future system of disposal.

In framing this recommendation I do not desire to be understood as proposing an indefinite postponement of the construction of disposal works, but simply such temporary delay as will permit of a full investigation of this important matter by the engineer without interfering with or delaying the construction of the collecting system.

I am, dear sir,

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

The approval of the Commissioner was given, subject to the above recommendations of the consulting engineer of the State Department *of Health.*

# SANDY HILL, N. Y.

## Changes in sewer plans

Original plans for a system of sewers for the village of Sandy Hill were approved by the State Board of Health on June 30, 1896, and appear in the 17th annual report of the Board.

On January 30, 1901, the State Board of Health approved a change of plan, which change is represented by a sewer map forming Plate Q of this report, and a descriptive report of the changes hereto appended.

JOHN H. DERBY, *President;* MARCUS C. ALLEN, *Vice-President;* WILLIAM J. GALLAGHER, JOHN TOOLE, F. M. VAN WORMER, *Board of Sewer Commissioners of the Village of Sandy Hill, N. Y.:*

NEW YORK, *November* 16, 1900

Gentlemen—In response to our verbal agreement of September 26, 1900, in accordance with which I was to make for your commission amended and extended plans for a permanent system of sewers for the village of Sandy Hill, I submit herewith this report, a map on tracing cloth showing in plan the proposed sewers, two blue prints of the map, and a book of profiles of 29 plates giving the corrected pipe lines and details.

The amendments proper to the original plans of 1896 are made in accordance with the suggestions in my report to you dated New York, July 19, 1900, and are clearly shown on the amended plan and also by the use of green ink in the book of profiles. The additions to the system for the new streets opened since 1896 in various parts of the village are also definitely shown on the plans and in detail by the profiles found on plates Nos. 25, 26 and 27 of the book of profiles.

In the following discussion I shall sometimes quote largely from my report of July 19, 1900.

## NEW STREETS SEWERED

The new streets opened and developed since 1896 are found mainly in two localities. In the northeastern portion of the village Glenn and William streets have been extended to Burgoyne avenue and Lincoln street to its intersection with William street. While in the neighborhood of the school buildings, Clark's lane has been lengthened to Union street; Swan, North Oak, East, School and Union streets have been built, and Tidmarsh street and Weston avenues have been improved. Early in October surveys were made of the above streets and the results, as already stated, have been incorporated in the plans and profiles.

In designing the system, to secure a ready gravity discharge of the storm waters and sewage from all the new streets, it has been found necessary to slightly change the boundaries of the three natural drainage districts.

The dividing line between districts Nos. 1 and 3 runs across both Glenn and William streets. The sewers proposed to be laid in the extensions of these streets must partly discharge into districts No. 1 and partly into districts No. 3. The profiles on sheet No. 25 clearly show the sizes of sewers and the summits and grades adopted. In this connection it has been found necessary to increase the size of the sewer on Burgoyne avenue (see plate No. 20) and to insure the proper discharge by gravity the pipe line in this avenue has been laid at a greater depth than in the original plans of 1896. On plate No. 25 is also shown the profile of the sewer in the extension to Lincoln street, found between Colman avenue and William street.

In the region of School street, in order to drain the new streets it has been necessary to change the sewer sizes and the grades originally proposed in Clark's lane, Basin street, Main street, from Basin street to Lumber street, and in Lumber street. The sizes of the sewers in the new streets of this vicinity, and the grades at which it is proposed to have the sewers laid, are all clearly shown on profiles Nos. 26 and 27. Some of

these streets, according to the actual level of the ground, properly lie in district No. 3, and at first thought it would seem that their sewers should eventually drain into trunk sewer No. 3. I have, however, so adjusted the plans that the pipes may drain into the sewers of district No. 2, and I believe properly so. They could only drain into district No. 3 by running a pipe under the Glens Falls feeder canal toward the junction of trunk sewer No. 3 and Pearl street, over a very level and extended area and for a considerable length. The result would be that, due to the necessary excessively low grade, a large pipe would be required, naturally costly, and the more so because it must pass under the canal. Again, by giving these new streets an outlet into district No. 3, it would mean that they could not be provided with drainage for some time to come, since the sewers of district No. 3 are not to be built probably for many years to come. The new streets under consideration, moreover, belong essentially to the more improved and built-up parts of the village and should now be sewered.

The amended profiles show the changes of sewer sizes and grades for the pipes in Main street, from Basin to Lumber streets, and in Lumber street, as well as some changes at the junction of the Lumber street sewer with that in Ferry street.

Plate No. 27 also shows completely sewers proposed in the recently improved Tidmarsh street and Weston avenue.

### CONSIDERATION OF STORM-WATER FLOW

I agree with your engineer, Mr. Burk, who originally planned you a system in 1896, that the storm waters will take care of themselves on the steep and narrow slopes extending along the bank of the Hudson river. But in the built-up portion of the village surrounding Park street, and especially in the large level residential area of district No. 1, it is desirable to provide for the storm-water flows. It is my judgment that in these last mentioned districts a large portion of the storm water at present will take care of itself, and drain even in heavy storms into the sandy soil without much inconvenience to the residents.

The amended sewer sizes which I give might therefore seem questionable. It is probable, however, that with the growth of your village in population and wealth many of your more important streets will be improved with more impervious surfaces, and be so graded as to secure a much freer drainage of surface waters into the catch-basins. Your houses also will discharge their roof waters at once into the sewers. At such a time the percentage of rainwater reaching the sewers will be very materially greater than at the first installation of the system. I believe it will be safer therefore for you to use the pipe sizes I prescribe for your trunk sewers, especially in district No. 1, than to adhere to those shown on the original plans. The necessary increase in cost will be small, and the system will during a heavy storm be less in danger of gorging and possible local bursting of pipes. In John street, below Main street, the grades are heavy and drop manholes frequent. The sewer is a main sewer, and during storms the discharge will be great and the velocity of flow considerable. Danger from gorging should naturally be reduced to a minimum here and in Sumpter street.

## POPULATION AND WATER SUPPLY

The population of Sandy Hill at various times during the past 10 years, has been given or estimated as follows: 1892, 3460; 1896, estimated at 4000; 1898, 4100; 1900, estimated at 4600.

The population is gradually increasing, but not at a rate which could make the rate of increase a determinant factor in the sewer problem.

Through the courtesy of the Spring Brook water company I am informed that the largest amount of water pumped in any one day during the year ending June 30, 1900, was 588,310 gallons, and that the average daily duty during the same year was 337,000 gallons. Further, that the number of house connections is 462, and the average number of people per connection five. These figures would make the average supply per capita per day for those connected with the water works system 145 gallons, and the corresponding maximum 254 gallons.

A considerable quantity of this supply is no doubt used for street and lawn sprinkling and other purposes which do not allow all the water to reach the sewers. It may consequently be assumed that the maximum amount of sewage that can reach the sewers will be discharged at the rate of 200 gallons per capita per day for that part of the population connected with the water system.

It will be shown later that these figures do not affect the sizes of the sewers, but they can throw light upon the efficiency of the system in regard to possible large increases in population.

### GROUND WATER

On the steep slopes along the Hudson river there can be little drainage of this kind into the sewers. In the broad eastern and level portion of the village the soil is sandy and generally dry, except where locally saturated by seepage from the Glens Falls feeder canal. In general therefore the ground water question may be neglected, but wherever your constructing engineer may so direct sewer pipes of cast iron should be used along and near the canal to reduce to a minimum the leakage of seepage waters into the pipes.

### RUN-OFF FROM STORMS

For the computations of run-off I have employed the following formula given by McMath:

$$Q = c\,A\,r\,\sqrt[5]{S/A} \qquad \text{(I)}$$

Q = Run-off in cubic feet per second.

A = Drainage area in acres.

C = A coefficient depending mainly on the character of the surface.

r = Maximum rate of rain fall in inches per hour.

S = Average slope of drainage area per 1000 feet.

The coefficient "C" represents the degree of imperviousness of the surface drained. It varies in value from .2 to .9, the former figure being for more or less open country and the latter for cities with practically impervious surface. For rural dis-

tricts McMath gives .31 as a fair average. In these computations "C" has been assumed equal to .3.

I have been able to obtain no exact information as to the rate of rainfall in your village area. But short and heavy showers may readily occur with a rate of precipitation equal to and greater than two inches per hour. My computations assume "r" equal to 1.5 inches. This value is seen to be scant, but I have been led to use it from my knowledge of the topography of your village and the absence of ground waters.

The following table (I) gives results for the probable storm water flows of the three districts:

TABLE I

| DISTRICT | Approximate area in acres | Approximate catch-basin drainage in acres=A | S | Storm water flow in cubic feet per second |
|---|---|---|---|---|
| 1 | 290 | 150 | 9 | 38.5 |
| 2 | 508 | 58 | 4.3 | 15.2 |
| 3 | 286 | 44 | 5.8 | 13.0 |

It is understood that these figures are by no means excessive, and that they have been made as small as my judgment would advise.

## CHANGES IN PIPE DIAMETER AND GRADES

### *District No. 1*

Sumpter street, from John street to the outfall on the river bank, 33-inch brick sewer.

John street, from Sumpter to Main, 30-inch vitrified pipe sewer. The grades between the drop manholes on this section are given as .017 on the original plans. Such grades produce excessive velocities (10.24 feet per second for a 30-inch sewer flowing full or half full) which will tend to erode the pipes and possibly cause damage due to the waterfalls in the necessarily high drops in the numerous drop manholes. It will be better to use .01 grades with small increases in trench excavations. and these changes are shown on plate No. 8. Even a lower grade would be desirable and can be considered when the construction is definitely contemplated.

John street, from Main to Wright, 30-inch pipe sewer, necessary on account of low grades.

John street, from Wright to Katharine produced, 24-inch pipe sewer.

Main street, from John to Elm, a 15-inch pipe sewer will suffice and the change is indicated on the plans.

A slight change of grade has been necessary in Maple street in order to properly connect the School street sewer.

Also I have increased in diameter small end pipes to 8 and 10 inches in various cases in Pearl, Willow and Maple streets and in Hudson place to further reduce the necessity for flush tanks.

*District No. 2*

River street, from the outfall junction to Spring street, 22-inch pipe sewer.

Spring street, from River to Wall, replace 15-inch by 18-inch pipe sewers and 18-inch by 20-inch.

Wall street, from Spring to Ferry, 20-inch pipe sewer.

Ferry street, from Wall to the junction of Feeder and Notre Dame streets, replace 15-inch by 18-inch and 18-inch by 20-inch pipe sewers.

River street, from the outfall junction to Walnut street, 10-inch pipe sewer and decrease grades to .02 as shown on plate No. 5.

Walnut street, from River to Wall, replace an 8-inch by 10-inch and 10-inch by 15-inch pipe sewers. Change .025 grades to .02 as shown on plate No. 10.

Walnut street, from Wall to Main, and also along Main street, from Walnut to Clark's lane, use 15-inch pipe sewer.

In the northeast portion of district No. 2 there is a large and flat area which may eventually add to the storm waters to be taken care of by the Ferry street trunk, while the Walnut street branch must drain a large part of that portion of the village whose surface may easily become relatively highly impervious.

*District No. 3*

From the filter beds to the junction from Burgoyne avenue use a 22-inch trunk sewer; and from this junction to the intersection of Burgoyne avenue with Pine street use an 18-inch pipe sewer.

It is my opinion that this district will not need a sewer-system for many years to come.

Other changes of pipe sizes and grades of sewers have been made in the old streets of the three drainage districts, but not because of my storm water run-off computations. These changes have already been referred to under the heading "New streets sewered," and were found necessary in adding to the system sewers in the new streets.

## OUTFALL SEWERS

*Dilution*

If the sewage from districts Nos. 1 and 2 is now to discharge directly into the river, its proper dilution will depend on the one hand upon the character of the house sewage and the quantity of manufacturing refuse which is added to it, and on the other upon the proportion of running water into which it is discharged, or the amount of oxygen this running water contains. No putrefaction will take place in the river when the quantity of oxygen contained in the water is sufficient to gradually decompose the organic matter of the sewage and convert it into harmless compounds. It has been stated that "the sewage of 1000 persons can be satisfactorily diluted in non-tidal streams by a flow of water varying from one to seven cubic feet per second according to the different conditions of the stream." Assuming that the present needs require a flow of three cubic feet per second and that the population contributing sewage is 5000, the necessary discharge of the Hudson river would be 15 cubic feet per second. I have been unable to learn the low-water discharge of the Hudson at Sandy Hill. The whole question of the needs of a disposal plant rests with the New York State Board of Health, and I shall not follow it further in detail here. The transmission of a contagious

disease from one town to another will often suddenly settle the method of future disposal.

For the present your sewage can no doubt with impunity be discharged into the Hudson river, but this may not continue to be the case in the future. Further, it is being more and more recognized as a proper sanitary procedure for a community to treat its sewage by some tried method before disposing of the effluent by discharge, as in this case, into the Hudson river with other towns so close at hand below. You may therefore be called upon by the New York State Board of Health at any time to install a disposal plant. Were this possibility not probable it would be in order to inquire whether the sewage from districts Nos. 1 and 2 could not better be carried by tunnel along the east bank of the river and disposed of by dilution at a considerable distance below Baker's falls dam. Since a disposal plant may be necessary at any time, relative costs must at once banish this alternative. The site for the chemical precipitation plant therefore is easily decided upon and I agree with Mr. Burk in his selection.

The cast iron pipe outfall from district No. 1 is laid in the river bed along the lines shown on your original plans until it reaches the Baker's falls dam, at which point it bends and continues for about 300 feet along the axis of the stream and in the groove in the rocks, that the free end may discharge at all times into running water. When a disposal plant is eventually built the pipe must take approximately the positions shown on the original plans, and as given by dashed lines on the amended plans. This cast iron pipe should be 30 inches in diameter.

The cast iron pipe outlet for district No. 2 starts from the river street junction, and is to be 24 inches in diameter. It must have a storm-water outflow at the river bank. From this point a 12-inch cast iron pipe laid in the bed of the Hudson river connects the outfall of district No. 2 with that of district No. 1. The 12-inch connection can carry the sewage proper of a population of 5400 people in district No. 2, but it is not intended to carry storm water. It need not necessarily be built until a disposal plant is required. So long as it may remain unbuilt, however, care must

be taken to insure a complete dilution of the sewage of district No. 2, as it discharges from the storm-water outflow, and especially in dry weather or low stages of the river.

A disposal plant for the sewage of districts Nos. 1 and 2 must be chemical. Filtration would be desirable but there is no proper land available for the purpose.

The sewage of district No. 3 can be treated by filtration upon the soil. I have examined the ground at the southeast corner of the village and find that a site for a filtration plant can readily be selected when the necessity arises.

### CAPACITY OF THE SYSTEM

Your sewers have been designed to carry storm water, but only the storm flow from those level areas which as your village develops will not after heavy storms readily drain themselves. Any increase in the number of catch-basins in districts Nos. 1 and 2, above the 79 shown on the amended plans, must be carefully considered and additional catch-basins should not be added without the advice of the engineer. Were the systems to carry sewage only they could provide for a population very many times greater than your village will probably ever have. The sewers of district No. 1, for example, if storm waters were excluded, could carry the sewage of about 144,000 people who used the water supply stated in one of the preceding paragraphs.

Your sewers, if built on the lines indicated, will be sufficient for both the sewage of a large population and the probable storm-water flows for many years.

The sewers are seen to be independent of the population but now necessary for storm water.

### GRADES AND VELOCITIES

The minimum velocity for self-cleansing should be about three feet per second in the smaller sewers. It may be slightly less in the larger sewers. The report of your original designing engineer (consult 17th annual report of the State Board of Health of New York, page 69) states that the following gradients have generally been taken as the minimum for self-cleansing:

For 6-inch pipe, 1 per cent grade.

For 8-inch pipe, .8 per cent grade.

For 10-inch pipe, .6 per cent grade.

For 12-inch pipe, .5 per cent grade.

When the sewers flow half full the velocities corresponding to these gradients will be:

For 6-inch pipe, 2.82 feet per second.

For 8-inch pipe, 2.83 feet per second.

For 10-inch pipe, 2.92 feet per second.

For 12-inch pipe, 3.00 feet per second.

When the sewers flow less than half full the velocities will be proportionately smaller. At dead ends therefore the gradients should be if possible even greater than those above referred to, otherwise flush tanks become necessary. In studying and revising the plans I have found or have introduced in general either greater grades at dead ends than the above or flush tanks or both. This question should receive strict attention when sewers are laid in streets to be improved in the future.

The maximum velocity in the sewer pipes should not in general exceed six feet per second, but due to the heavy slopes near the Hudson river it has been necessary for financial reasons to sometimes slightly exceed this limit. The highest velocity in the system is 8.48 feet per second for a 30-inch sewer flowing full or half full. It occurs in the John street sewer, but only for a limited length. (See plate No. 8.) As already stated this velocity can be further reduced if desired by the constructing engineer. A .006 grade gives for a 30-inch sewer for full or half full flow a velocity of 6.57 feet per second. No other sewers in the system have velocities exceeding six feet per second.

Few 6-inch sewers have been used. The dead ends and smaller branches are in general 8 inches as a minimum.

## MANHOLES

Manholes are provided at all sewer intersections and at all changes of grades, alignment and size, with straight lines between the successive manholes not exceeding 400 feet and seldom more

than 300 feet. Drop manholes are frequent in the design, due to the steep slopes to be found in various parts of the village. Each manhole is to have a cast iron pan to catch road dirt.

The workmanship and materials to be employed have already been alluded to in the reports accompanying the original designs of 1896. They are to be of the best and in accordance with the best practice.

Respectfully submitted.

CHAS. DERLATH, JR.,
*Civil engineer*

Columbia university, New York city, November 16, 1900

# RULES AND REGULATIONS

FOR THE

# SANITARY PROTECTION OF WATER SUPPLIES

# VILLAGE OF CORNWALL-ON-HUDSON

**Rules and regulations for the sanitary protection of the public potable water supply of the village of Cornwall, Orange County, N. Y.**

(1) No privy, vault, pit, or cesspool, or other non-transportable receptacle of any kind, used for the deposit, reception or storage of human excreta, shall be constructed, located, placed or maintained within 300 feet, horizontal measurement, of the high-water mark of the impounding or distributing reservoir, or within 300 feet horizontal measurement, of the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse of any kind, the water of which, when running, flows eventually into said reservoir, the public water supply of said village of Cornwall, New York.

(2) Every privy or place for the deposit, reception or storage of human excreta which is constructed, located or maintained within 300 feet, horizontal measurement, of the high-water mark of said reservoir, or of any pond, or within three hundred (300) feet, horizontal measurement, of the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse aforesaid, and from which privy the excreta are not at once removed automatically by means of suitable water-tight pipes or conduits to some proper place of ultimate disposal as hereinafter provided, shall be arranged in such manner that all said excreta shall be received and temporarily retained in suitable vessels or receptacles, which shall be at all times maintained in an absolutely water-tight condition, and which will permit of convenient removal to some place of ultimate disposal as hereinafter set forth.

(3) The excreta collected in the aforesaid removable receptacles shall be removed, and the receptacles cleansed and deodorized as often as may be found necessary to maintain the privy in proper sanitary condition, and to effectually and strictly prevent any overflow upon the soil or upon the founda-

tion or floor of the privy. In effecting this removal the utmost care shall be exercised that none of the contents be allowed to escape while being transferred from the privy to the place of disposal hereinafter specified, and that the least possible annoyance or inconvenience be caused to the occupants of the premises or of the adjoining premises.

(4) Unless otherwise specifically ordered or permitted by the State Department of Health, the excreta collected in the aforesaid receptacles shall, when removed, be disposed of by burying in trenches or by thoroughly digging into the soil at such places and in such manner as to effectually prevent them being washed over the surface of the ground by rain or melting snow, and at distances not less than five hundred (500) feet, horizontal measurement, from the high-water mark of said reservoir or of any pond, and not less than three hundred (300) feet, horizontal measurement, from the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse of any kind, the water of which, when running, flows into said reservoir.

(5) Whenever it shall be found that owing to the character of the soil or of the surface of the ground, or to the height or flow of the subsoil or surface water, or other special local conditions, the excremental matter from any privy or aforesaid receptacle, or from any trench or place of disposal may, in the opinion of the State Department of Health, be washed over the surface of the ground, or through the soil into said reservoir, or into any pond, spring, stream, ditch, gutter, drain or other watercourse tributary to the aforesaid water supply, then the said privy or receptacle for excreta or trench or place of disposal, shall after due notice to the owner, be removed to such greater distance, or to such places as shall be considered safe and proper by the State Department of Health.

(6) No sewage, garbage, putrescible matter, house slops, sink waste, water in which milk cans, clothes or bedding have been washed or rinsed, nor any polluted water or liquid shall be thrown or discharged into said reservoir, or into any pond, reservoir, spring, stream, ditch, gutter, drain or watercourse afore-

said, nor shall any such liquid or solid matter be thrown or discharged upon the surface of the ground or into the ground below the surface in any manner whereby the same may flow into said reservoir, or into any pond, spring, stream, ditch, gutter, drain or watercourse aforesaid within fifty feet, horizontal measurement, of the high-water mark, edge, margin, or precipitous bank of said reservoir, or of any pond, spring, stream, ditch, gutter, drain or watercourse aforesaid, unless the effluent water shall have been purified as hereinafter provided.

(7) No stable, cattle pen, pigsty, henhouse, barnyard, hog yard, poultry yard, hitching place or standing place for horses or other animals, and no manure pile, compost heap, piles of fermented or decayed fruit, vegetables, roots, grain, sawdust, leaves or other vegetable substances shall be located, placed, maintained or allowed to remain in such place or manner that the washings or drainage therefrom may flow by open, blind, or covered drains or channels of any kind into said reservoir, or into any pond, spring, stream, ditch, gutter, or watercourse aforesaid, without first having passed over or through such amount of soil as to have become properly purified, and in no case shall the distance from such stable, cattle pen, pigsty, henhouse, barnyard, poultry yard, hitching place or standing place for horses or other animals, manure pile, compost heap, pile of fermented or decayed fruit, vegetables, roots, grain, sawdust, leaves or other vegetable substances to the high-water mark of said reservoir be less than three hundred (300) feet, horizontal measurement, nor the distance from such stable, pen, yard, pile, heap, place or substance to the edge, margin or precipitous bank of such spring, stream, ditch, gutter, or watercourse be less than three hundred (300) feet, horizontal measurement.

(8) No human excreta or compost containing human excreta shall be spread upon the ground within five hundred (500) feet, horizontal measurement, of the high-water line of said reservoir, nor within three hundred (300) feet, horizontal measurement, of the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse aforesaid, and no

manure or compost of any kind shall be spread or deposit as to be washed a less distance than one hundred (100) over the surface or through the soil before reaching the ne point of any such aforesaid watercourse, drain, gutter, stream or spring.

(9) The polluted water and other liquids defined in the rule herein may be carried from their source into a proper signed and constructed cesspool, and septic tank approve the health board of the village of Cornwall, or their repres tive. Such structure shall be water-tight, thoroughly cov so as to exclude the light and free currents of air. Its d shall provide for the inflowing and effluent water such mea shall prevent the other than normal stirring of the con undergoing purification. Such a structure may be located v convenient for the owner of the property.

(10) No clothing, animals, or vehicles shall be washed in reservoir, nor in any spring, stream, ditch, or watercourse a said, nor shall the owner of any cattle, horses, sheep, swi other animals allow or permit them to wallow or stand i waters of said springs, streams, ditches, or watercourses.

(11) Penalty.—In accordance with section 70 of chapte of the laws of 1893, as amended by chapter 251 of the la 1899, the penalty for each and every violation, of or non-co ance with any of the above given mandatory rules and re tions, is hereby fixed and imposed at two hundred dollars ( to be recovered as provided by law, from every corpora person, or persons guilty of any such violation or non-co ance.

The above rules and regulations for the sanitary prote of the public potable water supply of the village of Cor are this day made, ordained and established pursuant to ch 661 of the laws of the state of New York for 1893 and ch 251 of the laws of the state of New York for 1899.

(Signed) DANIEL LEWIS
*Commissioner of Hea*

Albany, N. Y., April 8, 1901.

ALBANY, N. Y., *April* 8, 1901

*Publishers of the Cornwall Local, Cornwall-on-Hudson, N. Y.:*

Gentlemen—I send you herewith enclosed copy of rules and regulations for the sanitary protection of the public potable water supply of the village of Cornwall, Orange county, New York, with the request that the same be published in your paper once in each week for six consecutive weeks, and send bill for same to the water board of the village of Cornwall in compliance with the following section of law:

"Section 70. Rules and regulations of the State Board—The State Board of Health may make rules and regulations for the protection from contamination of any or all public supplies of potable waters and their sources within the state. If any such rule or regulation relates to a temporary source or act of contamination, any person violating such rule or regulation shall be liable to prosecution for misdemeanor for every such violation, and on conviction shall be punished by a fine not exceeding two hundred dollars, or imprisonment not exceeding one year, or both. If any such rule or regulation relates to a permanent source or act of contamination, said board may impose penalties for the violation thereof or the non-compliance therewith, not exceeding two hundred dollars for every such violation or non-compliance. Every such rule or regulation shall be published at least once in each week for six consecutive weeks, in at least one newspaper of the county where the waters to which it relates are located. The cost of such publication shall be paid by the corporation or municipality benefited by the protection of the water supply, to which the rule or regulation published relates. The affidavit of the printer, publisher or proprietor of the newspaper in which such rule or regulation is published may be filed, with the rule or regulation published, in the county clerk's office of such county, and such affidavit and rule and regulation shall be conclusive evidence of such publication, and of all the facts therein stated in all courts and places."

After the rules have been published for six consecutive weeks, as required by the above section of law, you will please forward a copy of the rules as published, together with your affidavit, to this office in order that the same may be filed in the office of the county clerk of your county.

Please acknowledge receipt of this.

Very respectfully
DANIEL LEWIS
*Commissioner*

ALBANY, *June* 14, 1901

Hon. WILLIAM G. TAGGART, *County Clerk of Orange County, Goshen, N. Y.:*

Dear Sir—Enclosed I send you a copy of the rules and regulations for the sanitary protection of the public potable water supply of the village of Cornwall, Orange county, New York, as approved by the State Department of Health, April 8, 1901, together with the affidavit of L. G. Goodnough, editor and proprietor of the Cornwall *Local*, to the effect that said rules and regulations had been published in said newspaper once each week for six consecutive weeks (the first publication being on the 11th day of April, 1901), according to law.

The rules and regulations and affidavit are now sent to you for filing in your office in accordance with the provisions of section 70, article 5, of chapter 661, laws of 1893, as amended by chapter 251, laws of 1899.

Please acknowledge receipt.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

# KINGSTON, N. Y.

**Rules and regulations for the sanitary protection of the Sawkill, Cooper lake and the Mink Hollow creek above the dam near Lake Hill and the reservoirs furnishing the public potable water supply of the city of Kingston, N. Y.**

## RULE I

### PRIVIES NEAR STREAMS, SPRINGS AND WATERCOURSES

No privy shall be located within fifty feet of any spring, stream or dry watercourse, the water from which, when running empties eventually into the Sawkill, Cooper lake or Mink Hollow above the reservoirs.

## RULE II

Any privy situated within fifty feet of any stream, spring or dry watercourse, the water from which, when running, empties into the Sawkill, Cooper lake or Mink Hollow above the reservoirs shall be constructed without a vault, and shall have, under the seats, half barrels, tubs, pails or water-tight boxes or troughs, arranged to be easily removed, emptied, cleaned and returned to their places under the privy seats. Ashes or dry earth shall daily be used in these privies as a deodorizer and absorbent.

## RULE III

Section A—The owners or occupants of premises having privies with tubs, pails or boxes shall cause the contents to be removed and the receptacle to be cleansed as often as is necessary to keep the privy in such sanitary condition that no pollution of the soil shall occur.

Section B—The contents of the said privies shall be disposed of in such a manner that they cannot be washed into any stream, dry watercourse, ravine, spring or well on the Sawkill, Cooper

lake or Mink Hollow watershed, either over the surface or through the subsoil, and the excremental matter shall be so placed as not to cause an offensive nuisance.

### RULE IV

If owing to the porous character of the soil, the height and flow of the surface or subsoil waters, the steepness of the slopes, or other conditions of the locality, it shall be the judgment of the local board of health or of the State Department, that the excremental matter from any privy may be washed on the surface or through the soil into some neighboring spring or watercourse tributary to the Sawkill, Cooper lake or Mink Hollow, then after due notice to the owners or occupants of these premises their privy shall be made to conform to the rules governing privies situated within fifty feet of watercourses.

### RULE V

#### HOUSE SLOPS, SINK WASTES, LAUNDRY WATER AND OTHER SEWAGE

Section A—No sewage, house slops, sink wastes, water in which clothes have been washed or rinsed, nor any other polluted water shall be discharged or thrown into any stream, spring or dry watercourse on any part of the watershed draining into the Sawkill, Cooper lake or Mink Hollow and the reservoirs, nor shall any such polluted waters be thrown upon the ground or into it where they may pollute any spring, stream or watercourse on these watersheds.

Section B—Neither clothes nor anything which pollutes water shall be washed in the springs or streams which flow into the Sawkill, Cooper lake or Mink Hollow and the reservoirs.

### RULE VI

#### GARBAGE

No garbage shall be thrown into any spring or stream on these watersheds, nor shall any substances be placed where they may be washed into these springs or streams.

## RULE VII

### ANIMAL MANURES

No stable, pigsty, henhouse, barnyard, hog yard, hitching or standing place for horses, or other place where animal manure accumulates, shall be so constructed, located or maintained that the manure or leachings from it may wash into any spring, stream or dry watercourse running into the Sawkill, Cooper lake or Mink Hollow and the reservoirs.

## RULE VIII

### ANIMAL AND VEGETABLE MATTER

No dead animal, bird or fish, nor any filthy nor impure matter, nor any decayed fruit, vegetable substances, leaves, sawdust, roots, branches or trunks of trees, in any condition of their growth or decay, shall be thrown into any spring or stream on these watersheds, or into the reservoirs.

### MANUFACTURING WASTES

No waste products, putrescible matter or polluted waters from any slaughter-houses, cheese factories, wine or beer vaults, cider mills, tanneries, saw mills, or other manufactories shall be thrown or allowed to run into any pond, spring or stream, or dry watercourse on any part of these watersheds.

## RULE IX

### WASHING SHEEP OR OTHER ANIMALS

Section A—No sheep or animals shall be washed in the reservoirs, or in any spring, pond or stream on these watersheds.

Section B—No swine, sheep, cattle or any animals shall be allowed or permitted to stand, walk or roam in the reservoirs or in any spring, pond or stream on these watersheds.

Section C—No person shall wash or bathe himself or herself in the reservoirs or in any influent stream within five miles of any of them.

## RULE X

### MANAGEMENT OF THE RESERVOIR

The reservoir shall not be unnecessarily drawn down during the warm months, but shall be kept as deep and as nearly at a uniform level as practicable, to prevent the pollution of the water with dead organic matter.

## RULE XI

No filter or screen shall be used when in a filthy condition and liable to pollute the water in the main, and no filter or screen shall be used at the head of the main which cannot be constantly examined and cleaned.

### PENALTY

In accordance with section 70 of chapter 661 of the laws of 1893, as amended by chapter 251 of the laws of 1899, the penalty for each and every violation or non-compliance with any of the above rules and regulations is hereby fixed and imposed at two hundred dollars ($200) to be recovered as provided by law, from every corporation, person, or persons guilty of any such violation or non-compliance.

The above rules and regulations for the sanitary protection of the Sawkill, Cooper lake and the Mink Hollow creek above the dam near Lake Hill and the reservoirs furnishing the public potable water supply of the city of Kingston are this day made, ordained and established pursuant to chapter 661 of the laws of the state of New York for 1893 and chapter 251 of the laws of the state of New York for 1899.

DANIEL LEWIS
*Commissioner of Health*

Albany, N. Y., May 22, 1901

ALBANY, N. Y., *May* 22, 1901

*Publishers of the Kingston Freeman, Kingston, N. Y.:*

Gentlemen—I send you herewith enclosed copy of rules and regulations for the sanitary protection of the Sawkill, Cooper lake and the Mink Hollow creek above the dam near Lake Hill and the reservoirs furnishing the public potable water supply

of the city of Kingston, N. Y., with the request that the same be published in your paper once in each week for six consecutive weeks, and send bill for same to the Kingston water works department, in compliance with the following section of law:

"Section 70. Rules and regulations of State Board.—The State Board of Health may make rules and regulations for the protection from contamination of any or all public supplies of potable waters and their sources within the state. If any such rule or regulation relates to a temporary source or act of contamination, any person violating such rule or regulation shall be liable to prosecution for misdemeanor for every such violation, and on conviction shall be punished by a fine not exceeding two hundred dollars, or imprisonment not exceeding one year, or both. If any such rule or regulation relates to a permanent source or act of contamination, said Board may impose penalties for the violation thereof or the non-compliance therewith, not exceeding two hundred dollars for every such violation or non-compliance. Every such rule or regulation shall be published at least once in each week for six consecutive weeks, in at least one newspaper of the county where the waters to which it relates are located. The cost of such publication shall be paid by the corporation or municipality benefited by the protection of the water supply, to which the rule or regulation published relates. The affidavit of the printer, publisher or proprietor of the newspaper in which such rule or regulation is published may be filed, with the rule or regulation published, in the county clerk's office of such county, and such affidavit and rule and regulation shall be conclusive evidence of such publication, and of all the facts therein stated in all courts and places."

After the rules have been published for six consecutive weeks as required by the above section of law, you will please forward a copy of the rules as published, together with your affidavit, to this office, in order that the same may be filed in the office of the county clerk of your county.

Please acknowledge receipt of this.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

ALBANY, N. Y., *July* 2, 19(

Hon. JOHN D. FRATSHER, *County Clerk of Ulster County, Kings N. Y.:*

Dear Sir—Enclosed I send you a copy of the rules and r lations for the sanitary protection of the Sawkill, Cooper and the Mink Hollow creek above the dam near Lake Hill the reservoirs furnishing the public potable water suppl the city of Kingston, N. Y., as approved by the State Departn of Health, May 22, 1901, together with the affidavit of Jame Low, foreman of the Kingston *Daily Freeman*, to the effect said rules and regulations had been published in said newsp for six times, once in each week successively (commencing on 25th day of May, 1901, and ending on the 29th day of June, 1 according to law.

The rules and regulations and affidavit are now sent to you filing in your office in accordance with the provisions of sec 70, article 5, of chapter 661, laws of 1893, as amended by cha 251, laws of 1899.

Please acknowledge receipt.

Very respectfully

DANIEL LEWIS

*Commissioner of Heal*

## PERRY, N. Y.

**Rules and regulations for the sanitary protection of the public pot water supply of the village of Perry, Wyoming county, N. Y**

(1) No privy, vault, pit or cesspool, or other non-transport receptacle of any kind, used for the deposit, reception or s age of human excreta shall be constructed, located, place maintained within 300 feet, horizontal measurement, of the h water mark of Silver lake, or within 300 feet, horizontal m

urement, of the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse of any kind, the water of which, when running, flows eventually into Silver lake, the public water supply of said village of Perry, N. Y.

(2) Every privy or place for the deposit, reception or storage of human excreta which is constructed, located or maintained within 300 feet, horizontal measurement, of the high-water mark of Silver lake or of any pond or reservoir, or within three hundred (300) feet, horizontal measurement, of the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse aforesaid, and from which privy the excreta are not at once removed automatically by means of suitable water-tight pipes or conduits to some proper place of ultimate disposal as hereinafter provided, shall be arranged in such manner that all said excreta shall be received and temporarily retained in suitable vessels or receptacles, which shall be at all times maintained in an absolutely water-tight condition, and which will permit of convenient removal to some place of ultimate disposal as hereinafter set forth.

(3) The excreta collected in the aforesaid removable receptacles shall be removed, and the receptacles cleansed and deodorized as often as may be found necessary to maintain the privy in proper sanitary condition, and to effectually and strictly prevent any overflow upon the soil or upon the foundation or floor of the privy. In effecting this removal the utmost care shall be exercised that none of the contents be allowed to escape while being transferred from the privy to the place of disposal hereinafter specified, and that the least possible annoyance or inconvenience be caused to the occupants of the premises or of the adjoining premises.

(4) Unless otherwise specifically ordered or permitted by the State Department of Health, the excreta collected in the aforesaid receptacle shall, when removed, be disposed of by burying in trenches or by thoroughly digging into the soil at such places and in such manner as to effectually prevent them being washed over the surface of the ground by rain or melting snow, and at

distances not less than five hundred (500) feet, horizontal measurement, from the high-water mark of Silver lake or of any pond or reservoir, and not less than three hundred (300) feet, horizontal measurement, from the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse of any kind, the water of which, when running, flows into said Silver lake.

(5) Whenever it shall be found that owing to the character of the soil or of the surface of the ground, or to the height or flow of the subsoil or surface water, or other special local condition, the excremental matter from any privy or aforesaid receptacle, or from any trench or place of disposal may, in the opinion of the State Department of Health, be washed over the surface of the ground, or through the soil into Silver lake or into any pond, reservoir, spring, stream, ditch, gutter, drain or other watercourse tributary to the aforesaid water supply, then the said privy or receptacle for excreta or trench or place of disposal shall, after due notice to the owner, be removed to such greater distance or to such places as shall be considered safe and proper by the State Department of Health.

(6) No sewage, garbage, putrescible matter, house slops, sink waste, water in which milk cans, clothes or bedding have been washed or rinsed, nor any polluted water or liquid shall be thrown or discharged into said Silver lake, or into any pond, reservoir, spring, stream, ditch, gutter, drain or watercourse aforesaid, nor shall any such liquid or solid matter be thrown or discharged upon the surface of the ground or into the ground below the surface in any manner whereby the same may flow into Silver lake or into any reservoir, pond, spring, stream, ditch, gutter, drain or watercourse aforesaid within fifty feet, horizontal measurement, of the high-water mark, edge, margin or precipitous bank of said Silver lake or of any pond, reservoir, spring, stream, ditch, gutter, drain or watercourse aforesaid, unless the effluent water shall have been purified as hereinafter provided.

(7) No stable, cattle pen, pigsty, henhouse, barnyard, hog yard, poultry yard, hitching place or standing place for horses

or other animals, and no manure pile, compost heap, piles of fermented or decayed fruit, vegetables, roots, grain, sawdust, leaves or other vegetable substances shall be located, placed, maintained or allowed to remain in such place or manner that the washings or drainage therefrom may flow by open, blind or covered drains or channels of any kind into Silver lake or into any pond, reservoir, spring, stream, ditch, gutter or watercourse aforesaid, without first having passed over or through such amount of soil as to have become properly purified, and in no case shall the distance from such stable, cattle pen, pigsty, henhouse, barnyard, poultry yard, hitching place or standing place for horses or other animals, manure pile, compost heap, pile of fermented or decayed fruit, vegetables, roots, grain, sawdust, leaves or other vegetable substances to the high-water mark of said Silver lake, be less than three hundred (300) feet, horizontal measurement, nor the distance from such stable, pen, yard, pile, heap, place or substance to the edge, margin or precipitous bank of such spring, stream, ditch, gutter or watercourse be less than three hundred (300) feet, horizontal measurement.

(8) No human excreta or compost containing human excreta shall be spread upon the ground within five hundred feet, horizontal measurement, of the high-water line of said Silver lake, nor within three hundred (300) feet, horizontal measurement, of the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse aforesaid, and no manure or compost of any kind shall be spread or deposited so as to be washed a less distance than 100 feet over the surface or through the soil before reaching the nearest point of any such aforesaid watercourse, drain, gutter, ditch, stream or spring.

(9) No dead animal, bird nor fish, nor part thereof, nor any putrescible matter, or polluted water from any slaughter-house, dairy, creamery, cheese factory, cider mill or other manufactory shall be thrown or allowed to run into Silver lake or into any pond, reservoir, spring, stream, ditch, gutter, drain or watercourse aforesaid, nor shall they be so deposited that any por-

tion thereof, or of the polluted drainage therefrom, shall be washed over the surface or through the soil a less distance than three hundred (300) feet before reaching the nearest point of any such aforesaid watercourse, drain, gutter, ditch, stream or spring.

(10) The polluted water and other liquids defined in the sixth and ninth rules herein may be carried from their source into a properly designed and constructed cesspool and septic tank approved by the health board of the village of Perry, or their representative. Such structure shall be water-tight, thoroughly covered, so as to exclude the light and free currents of air. Its design shall provide for the inflowing and effluent water such means as shall prevent the other than normal stirring of the contents undergoing purification. Such a structure may be located where convenient for the owner of the property.

(14) All boats sailing upon Silver lake of such a size and capacity and intended to be employed as public carriers or passenger boats, and also private boats of similar size, shall be provided with water-tight receptacles in lieu of the ordinary water-closet and urinal. The contents of which receptacles shall be disposed of as provided in rules three and four herein for similar cases on shore of the lake.

(12) No clothing, animals or vehicles shall be washed in said lake, nor in any spring, stream, ditch or watercourse aforesaid, nor shall the owner of any cattle, horses, sheep, swine or other animals allow or permit them to wallow or stand in the waters of said lake, springs, streams, ditches or watercourses.

(13) No salt, brine or refuse derived from the manufacture of salt shall be thrown or discharged directly into said lake, nor through any pipes or tunnels into said lake, nor in any spring, stream, ditch or watercourse aforesaid, nor thrown or discharged upon the surface of the ground or into the ground below the surface in any manner whereby the same may flow into said lake, or into any spring, stream, ditch or watercourse aforesaid.

(14) Penalty—In accordance with section 70 of chapter 661 of the laws of 1893, as amended by chapter 251 of the laws of 1899, the penalty for each and every violation or non-compliance with any of the above rules and regulations is hereby fixed and imposed at two hundred ($200) dollars, to be recovered as provided by law, from every corporation, person or persons guilty of any such violation or non-compliance.

The above rules and regulations for the sanitary protection of the potable water supply of the village of Perry are this day made, ordained and established pursuant to chapter 661 of the laws of the state of New York for 1893, and chapter 251 of the laws of the state of New York for 1899.

(Signed) DANIEL LEWIS
*Commissioner of Health*

Albany, N. Y., May 14, 1901

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ALBANY, N. Y., *May* 14, 1901

*Publishers of the Perry Record, Perry, N. Y.:*

Gentlemen—We send you herewith enclosed copy of rules and regulations for the sanitary protection of the public potable water supply of the village of Perry, Wyoming county, New York, with the request that the same be published in your paper once in each week for six consecutive weeks, and send bill for same to the board of water commissioners of Perry, in compliance with the following section of law:

"Section 70. Rules and regulations of State Board.—The State Board of Health may make rules and regulations for the protection from contamination of any or all public supplies of potable waters and their sources within the state. If any such rule or regulation relates to a temporary source or act of contamination, any person violating such rule or regulation shall be liable to prosecution for misdemeanor for every such viola-

tion, and on conviction shall be punished by a fine not exceeding two hundred dollars, or imprisonment not exceeding one year, or both. If any such rule or regulation relates to a permanent source or act of contamination, said Board may impose penalties for the violation thereof or the non-compliance therewith, not exceeding two hundred dollars for every such violation or non-compliance. Every such rule or regulation shall be published at least once in each week for six consecutive weeks, in at least one newspaper of the county where the waters to which it relates are located. The cost of such publication shall be paid by the corporation or municipality benefited by the protection of the water supply, to which the rule or regulation published relates. The affidavit of the printer, publisher or proprietor of the newspaper in which such rule or regulation is published may be filed, with the rule or regulation published, in the county clerk's office of such county, and such affidavit and rule and regulation shall be conclusive evidence of such publication, and of all the facts therein stated in all courts and places."

After the rules have been published for six consecutive weeks as required by the above section of law, you will please forward a copy of the rules as published, together with your affidavit, to this office in order that the same may be filed in the office of the county clerk of your county.

Please acknowledge receipt of this.

Very respectfully

T. A. STUART

*Chief clerk*

ALBANY, N. Y., *May* 14, 1901

*Publishers of the Perry Herald and News, Perry, N. Y.:*

Gentlemen—We send you herewith enclosed copy of rules and regulations for the sanitary protection of the public potable water supply of the village of Perry, Wyoming county, New York, with the request that the same be published in your paper once in each week for six consecutive weeks, and send bill for

same to the board of water commissioners of Perry, in compliance with the following section of law:

"Section 70. Rules and regulations of State Board.—The State Board of Health may make rules and regulations for the protection from contamination of any or all public supplies of potable waters and their sources within the state. If any such rule or regulation relates to a temporary source or act of contamination, any person violating such rule or regulation shall be liable to prosecution for misdemeanor for every such violation, and on conviction shall be punished by a fine not exceeding two hundred dollars, or imprisonment not exceeding one year, or both. If any such rule or regulation relates to a permanent source or act of contamination, said board may impose penalties for the violation thereof or the non-compliance therewith, not exceeding two hundred dollars for every such violation or non-compliance. Every such rule or regulation shall be published at least once in each week for six consecutive weeks in at least one newspaper of the county where the waters to which it relates are located. The cost of such publication shall be paid by the corporation or municipality benefited by the protection of the water supply, to which the rule or regulation published relates. The affidavit of the printer, publisher or proprietor of the newspaper in which such rule or regulation is published may be filed, with the rule or regulation published, in the county clerk's office of such county, and such affidavit and rule and regulation shall be conclusive evidence of such publication, and of all the facts therein stated in all courts and places."

After the rules have been published for six consecutive weeks as required by the above section of law, you will please forward a copy of the rules as published, together with your affidavit, to this office in order that the same may be filed in the office of the county clerk of your county.

Please acknowledge receipt of this.

Very respectfully

T. A. STUART

*Chief clerk*

ALBANY, N. Y., *July* 29, 1901

Hon. EDWARD M. JENNINGS, *County Clerk of Wyoming Count*
*Warsaw, N. Y.:*

Dear Sir—Enclosed I send you a copy of the rules and regul
tions for the sanitary protection of the public potable wat
supply of the village of Perry, Wyoming county, New York, a
approved by the State Department of Health, May 14, 190
together with the affidavit of Frank B. Smith, publisher of th
Perry *Herald and News*, to the effect that said rules and regul
tions were published in said newspaper once in each week fo
six weeks successively (from May 23, 1901, to June 27, 190
inclusive); also the affidavit of Carl G. Clarke, publisher of th
Perry *Record*, to the effect that said rules and regulations wer
published in said newspaper, once a week for six weeks (com
mencing on the 23d day of May, 1901, and ending on the 27t
day of June, 1901), according to law.

The rules and regulations and affidavits are now sent t
you for filing in your office in accordance with the provisions o
section 70, article 5, of chapter 661, laws of 1893, as amended b
chapter 251, laws of 1899.

Please acknowledge receipt.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

## CANASTOTA

### Violations of water rules

CANASTOTA, N. Y., *November* 3, 1900

*To the State Board of Health, Albany, N. Y.:*

Gentlemen—We have the honor to notify you that we hav
served copies of the rules and regulations upon the people wh

are maintaining the nuisances, which are the source of contamination of the water supply of the village of Canastota, according to law.

No action has been taken to abate said nuisance, and we have to ask you to take such action as is necessary to give us relief.

Very respectfully,

BOARD OF WATER COMMISSIONERS

By H. C. MORTON, *Superintendent*

ALBANY, N. Y., *November* 5, 1900

H. C. MORTON, *Superintendent Board of Water Commissioners, Canastota, N. Y.:*

Dear Sir—We are in receipt of your communication of the 3d instant, stating that the rules and regulations adopted by this Board for the sanitary protection of the public water supply of the village of Canastota are being violated by certain persons, and note your statement that notwithstanding the fact that copies of the rules and regulations have been served upon the parties, they fail to abate the nuisances.

In reply you are requested to furnish this Board with the names of the parties maintaining the nuisances, stating the nature of such nuisances, also the section or sections of rules being violated. Upon receipt of such report a representative of this Board will make an investigation.

Very respectfully

T. A. STUART

*Assistant Secretary*

CANASTOTA, N. Y., *November* 6, 1900

*To the State Board of Health, Albany, N. Y.:*

Gentlemen.—We have the honor to report as per your letter of November 5, 1900, as follows:

Stephen Moot, sections 8 and 10.—Pigsty and barnyard within 100 feet of stream. Cattle, etc., allowed to stand in stream.

Abram Tuttle, sections 8 and 10.—Barnyard within 100 feet of stream. Cattle allowed to stand in stream.

William Kelsey, section 8.—Cattle allowed to stand in stream.

J. C. Rasbach, sections 8 and 10.—Pigsty and barnyard within 100 feet of stream. Cattle, etc., allowed to stand in stream.

Abram Moon, sections 8 and 10.—Barnyard within 100 feet of stream. Cattle, etc., allowed to stand in stream.

William Harp, section 8.—Cattle, etc., allowed to stand in stream.

Theo. Moot, section 2.—Privy within 130 feet of stream.

Mrs. Chas. Cooper, sections 8 and 10.—Barnyard within 100 feet of stream. Cattle, etc., allowed to stand in stream.

Riley Moon, sections 2 and 8.—Privy within 130 feet of stream. Barnyard within 100 feet of stream.

Edward Heslin, section 8.—Cattle, etc., allowed to stand in stream.

Frank Twogood, section 8.—Cattle allowed to stand in stream.

Charles Bull, sections 8 and 10.—Pigsty and barnyard within 100 feet of stream. Cattle allowed to stand in stream.

R. D. Button, section 8.—Cattle, etc., allowed to stand in stream.

Hoping this covers the matter and that we may have speedy returns, we remain

Yours respectfully

BOARD OF WATER COMMISSIONERS, CANASTOTA, N. Y.

By H. C. MORTON, *Superintendent*

UTICA, N. Y., *April* 29, 1901

HON. DANIEL LEWIS, *Commissioner State Department of Health:*

Sir—November 7, 1900, Secretary Smelzer sent me a copy of a communication from the board of water commissioners of Canastota, dated November 6, 1900, relative to the alleged violations of certain regulations of the State Board of Health, adopted October 25, 1897, and made for the protection of the public water supply of Canastota.

Pursuant to section 71, article 5 of the Public health law, I was directed to make an early examination of the complaint and report to the State Board of Health.

Arrangements were made to go to Canastota the following Monday. In the interim snow came and kept coming and stayed with us so continuously that it was impracticable to make the examination until this spring.

On April 26, 1901, I made the examination in company with H. C. Morton, superintendent Canastota water works.

There are 13 cases of violation of the said rules set out in the letter of the water board, as follows:

1 Stephen Moot, section 8 and 10—Pigsty and barnyard within 100 feet of stream. Cattle, etc., allowed to stand in stream.

2 Abram Tuttle, section 8 and 10—Barnyard within 100 feet of stream. Cattle allowed to stand in stream.

3 William Kelsey, section 8—Cattle allowed to stand in stream.

4 J. C. Rasbach, section 8 and 10—Pigsty and barnyard within 100 feet of stream. Cattle, etc., allowed to stand in stream.

5 Abram Moon, section 8 and 10—Barnyard within 100 feet of stream. Cattle, etc., allowed to stand in stream.

6 William Harp, section 8—Cattle, etc., allowed to stand in stream.

7 Theo. Moot, section 2—Privy within 130 feet of stream.

8 Mrs. Chas. Cooper, section 8 and 10—Barnyard within 100 feet of stream. Cattle, etc., allowed to stand in stream.

9 Riley Moon, section 2 and 8—Privy within 130 feet of stream.

10 Edward Heslin, section 8—Cattle, etc., allowed to stand in stream.

11 Frank Twogood, section 8—Cattle allowed to stand in stream.

12 Charles Bull, section 8 and 10—Pigsty and barnyard within 100 feet of stream. Cattle allowed to stand in stream.

13 R. D. Button, section 8—Cattle, etc., allowed to stand in stream.

I have prepared the attached map so as to plainly show the locations of the several premises where these violations occurred relative to the reservoir, and the springs and streams which flow into it, and which is the source of supply for Canastota.

The map is to scale and is accurate as regards the railroad and highways and streams, but the buildings and barnyards shown are exaggerated to permit their delineation on a map drawn to so small a scale. The map plainly shows what I found to be the facts—that all the above defined violations could have occurred last November.

The following three rules or regulations (Nos. 2, 8 and 10) which are the ones violated are part of the rules and regulations for the protection of the public water supply of Canastota adopted October 25, 1897:

"RULE II

"No privy vault, pit or cesspool, or non-transportable receptacle of any kind for the reception or storage of human excreta, shall be constructed, located or maintained within 250 feet, horizontal measure, from the high-water mark or precipitous bank of any reservoir, or within 130 feet, horizontal measure, from such spring, stream, ditch or watercourse as aforesaid.

"RULE VIII

"No clothing, animals, vehicles nor anything which pollutes water shall be washed, nor shall any person bathe in any reservoir, spring, stream, ditch or watercourse aforesaid, nor shall any cattle, horses, sheep, swine or other animals be allowed to enter, wallow or stand in any reservoir, spring, stream, ditch or watercourse aforesaid.

"RULE X

"No stable, pigsty, henhouse, stable yard, barnyard, hog yard, duck yard, hitching or standing place for horses or cattle, nor any compost nor manure heap, or other place where animal manure accumulates, shall be located or maintained within 100 feet of any reservoir, spring, ditch or watercourse aforesaid."

These and also watering places for horses or cattle or other animals must be so arranged that the polluted drainage therefrom shall not flow into any such reservoir, spring, stream, ditch or watercourse without having undergone proper purification.

Such drainage shall not be allowed to flow through, upon, or around drains within 75 feet of high-water mark or precipitous bank of any reservoir, spring, stream, ditch or watercourse without having undergone such purification.

Taking the attached map, together with the rules quoted, you will see that each one of the 13 instances aforesaid of alleged violation of the rules and regulations for the sanitary protection of the public potable water supply of Canastota is a fact, and the violation was being maintained at the time of my inspection on April 26, 1901, by the following persons and in the manner stated:

No. 1, S. Moot.—Barnyard or cattle yard, henhouse and pigsty within 100 feet of a stream which flows into the reservoir, the source of the public potable water supply of Canastota. A stream also flows through a pasture lot on S. Moot's premises and nothing prevents cattle from standing and walking in said stream. There are hoofprints and other indications that cattle have recently entered and stood in said stream.

No. 2, Abram Tuttle.—Barnyard or cattle yard within 100 feet of a stream which flows into the reservoir of the Canastota water works. In fact the stream runs through the barnyard, and there was plain evidence that cattle or sheep walked into and stood in the bed of the stream.

No. 3, William Kelsey.—At the time of the complaint by the water board last November, the barnyard of William Kelsey was so arranged that cattle could walk about in the bed of the stream which, as the map shows, ran through the yard and was the regular drinking place for his cattle. Since then Mr. Kelsey has plowed up his barnyard, leaving only an alley leading from the barns to the water. He has built a receiving basin, covered it, and leads the water into a trough from which the cattle drink.

By the construction of a fence which he will soon make the cause of complaint will be fairly well removed.

No. 4, J. C. Rasbach.—Barnyard or cattle yard within 100 feet of a stream, as shown on the map, which flows into the Canastota reservoir. The stream in fact flows through the barnyard. Part of the water passes into a trough, but the cattle can and do walk in the bed of the stream, and numerous footprints show they stand in it.

No. 5, A. Moon.—A barnyard or cattle yard so enclosed by buildings and fences that a stream flows directly through the yard, thence into the reservoir of the Canastota water works. Ample evidence that cattle can and do enter into and walk in the bed of the stream.

No. 6, William Harp.—A stream which flows into the Canastota water works first passes through a lot on William Harp's farm which may be used as a pasture, though no cattle were in it at the time of my inspection. If it be used as a pasture there is nothing to prevent cattle from standing in the stream.

No. 7, Theo. Moot.—As the map shows, on the premises of Mr. Moot there is maintained a privy within 130 feet of a stream which flows into the Canastota reservoir. It is within 90 feet of the stream and is an ordinary vault, not transportable nor water-tight.

No. 8, Mrs. Charles Cooper.—A barnyard or cattle yard within 100 feet of a stream which flows into the Canastota reservoir. In fact the stream is diverted and its course runs a distance through the yard. Ample evidence is seen of cattle standing in the bed of the stream.

No. 9, Riley Moon.—Maintains a privy vault within 130 feet of a stream which flows into the Canastota water works. It is an ordinary privy vault, not water-tight and not transportable.

No. 10, Edward Heslin.—A barnyard or cattle yard within 100 feet of a stream which flows into the Canastota reservoir. Abundant evidence that cattle can and do stand in the stream.

No. 11, Frank Twogood.—A stream which flows into the Canastota reservoir passes through a lot on Mr. Twogood's farm

which can be, as apparently is, used as a pasture, though no cattle were pastured there on the day of my inspection. If so used, cattle could stand in the stream, as no fence exists to prevent it.

No. 12, Charles Bull.—A pigsty and barnyard within 100 feet of a stream which flows into the Canastota reservoir. In fact the stream flows directly through the barnyard and cattle and pigs were roaming in it at the day of my inspection. Nothing prevents them from standing in the stream.

No. 13, R. D. Button.—On this farm a lot extends along both sides of a stream for a long distance, as shown on the map, and this lot is apparently used as a pasture, though no cattle were in the lot at the time of inspection. Also on this farm a pasture lot is maintained near the head spring which joins this stream, which flows into the Canastota reservoir.

I also desire to report that an association of farmers residing near the Canastota reservoir have built during the past winter a milk station alongside the Lehigh valley railroad. It is shown on the map, and close by is the stream which flows into the reservoir. This stream is the convenient outlet or drain for the wastes from this milk station. The proprietors of the station have dug a hole in a clay bank back of the building and lead into the hole a trough which is supposed to carry such wastes away from the stream.

It has a temporary appearance and I doubt its efficiency. A better arrangement can be devised, and its construction should be enforced and its proper use maintained.

Under the provisions of section 71 to which I have referred, you seem to have no alternative but to require the local board of health to enforce the said rules and regulations.

To carry them out to the letter means a serious business in the case of several of the property owners. Cattle must have water, and a pasture without water in it is only an apology for one. In the five instances above referred to I am of the opinion that by the expenditure of a reasonable sum, water from the streams can be diverted by pipes and let into and away from

drinking troughs. Then by fencing off the streams the lands can still be used as pastures.

In the case of the barnyards noted, in some of them the water from the springs or streams can be collected and diverted into a receiver and led into a drinking trough and by pipes led away from the trough back into the stream. Then by proper fencing the cattle may drink, but not wallow or stand in the water of the stream.

The henhouses and pigstys mentioned should be removed further from the stream.

The two privy vaults should be cleaned out, the contents removed, and if the buildings be still kept in use, they should be provided with a suitable water-tight transportable receptacle.

Two copies of this report are submitted.

Very respectfully yours

C. W. ADAMS

*Consulting engineer, State Department of Health*

ALBANY, N. Y., *May* 7, 1901

CHARLES BULL, *President Board of Health, Town of Lincoln, Cottons, N. Y.:*

Dear Sir—Complaint having been made to this Department in November last by the board of water commissioners of the village of Canastota concerning alleged violations of rules and regulations made for the sanitary protection of the public water supply of the village of Canastota, one of the consulting engineers of the State Department of Health was designated to investigate the complaint and a copy of his report is herewith transmitted.

The report made by Mr. Adams, consulting engineer, shows that some 13 persons are violating the rules adopted by this Department for the sanitary protection of the Canastota water supply.

Pursuant to the provisions of section 71 of chapter 661 of the laws of 1893, as amended by chapter 251 of the laws of 1899, you are directed to convene the board of health of the

town of Lincoln, that they may enforce obedience to the rules being violated by the following persons as shown by the report of Mr. Adams: S. Moot, Wm. Kelsey, A. Moon, Theo. Moot, Riley Moon, Frank Twogood, Abram Tuttle, J. C. Rasbach, Wm. Harp, Mrs. Chas. Cooper, Edward Heslin, Chas. Bull.

You are directed to notify this Department of such action as your board may take looking to the enforcement of compliance with the rules referred to.

Very respectfully
DANIEL LEWIS
*Commissioner*

ALBANY, N. Y., *May* 7, 1901

FRITZ G. BLOCK, *President Board of Health, Town of Sullivan, Chittenango Station, N. Y.:*

Dear Sir—Complaint having been made to this Department in November last by the board of water commissioners of Canastota concerning alleged violations of rules and regulations made for the sanitary protection of the water supply of the village of Canastota, one of the consulting engineers of the State Department of Health was designated to investigate the complaint, and a copy of his report is herewith transmitted.

The report made by Mr. Adams, the consulting engineer, shows that a Mr. R. D. Button, residing in the town of Sullivan, is violating rule 8 of the rules adopted by this Department for the sanitary protection of the Canastota water supply; therefore, pursuant to the provisions of section 71 of chapter 661 of the laws of 1893, as amended by chapter 251 of the laws of 1899, you are directed to convene the board of health of the town of Sullivan that they may enforce obedience to the rule being violated by said R. D. Button.

It is requested that you promptly inform this Department of such action as the local board may take in the case of Mr. Button.

Very respectfully
DANIEL LEWIS
Commissioner

ALBANY, N. Y., *May* 22, 1901

CHAS. BULL, *President Board of Health, Town of Lincoln, Cottons, N. Y.:*

Dear Sir—I am in receipt of your communication of the 13th instant, stating that, at a special meeting of the board of health of the town of Lincoln held May 13, 1901, to consider alleged violations of rules and regulations adopted for the sanitary protection of the water supply of the village of Canastota, the following resolutions were adopted:

"Resolved, That we find the conditions surrounding each case reported by C. W. Adams, consulting engineer, to be the same that existed at the time of and long prior to the formation of the aforesaid Canastota water works.

"Resolved further, That this board does not concur in the report of said C. W. Adams, and that in our opinion such a condition and state of facts does not exist in any of the cases therein mentioned as to call for or justify any further action on the part of this board."

In reply you are informed that the board of water commissioners of the village of Canastota have been furnished with a copy of your report, with the advice that they proceed as provided by section 71 of chapter 661 of the laws of 1893, as amended by chapter 251 of the laws of 1899, which is as follows:

"Section 71. The officer or board having by law the management and control of the potable water supply of any municipality, or the corporation furnishing such supply, may make such inspection of the sources of such water supply as such officer, board or corporation deems it advisable, and to ascertain whether the rules or regulations of the State Board are complied with. If any such inspection discloses a violation of any such rule or regulation relating to a permanent source or act of contamination, such officer, board or corporation shall cause a copy of the rule or regulation violated to be served upon the person violating the same, with a notice of such violation. If the person served does not immediately comply with the rule or regu-

lation violated, such officer, board or corporation shall notify the State Board of the violation, which shall immediately examine into such violation; and if such person is found by the State Board to have actually violated such rule or regulation, the secretary of the State Board shall order the local board of health of such municipality to convene and enforce obedience to such rule or regulation. If the local board fails to enforce such order within ten days after its receipt, the corporation furnishing such water supply or the municipality deriving its water supply from the waters to which such rule or regulation relates, may maintain an action in a court of record, which shall be tried in the county where the cause of action arose against such person, for the recovery of the penalties incurred by such violation, and for an injunction restraining him from the continued violation of such rule or regulation."

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

DANIEL LEWIS, M. D., *Commissioner, Albany, N. Y.:*

Honored Sir—Pursuant to your request of May 7th the board of health of the town of Sullivan was duly convened on May 15, 1901, at the town clerk's office in said town, from which place said board secured a conveyance and visited the premises of R. D. Button, referred to in said communication, in said town, and made a thorough examination of the stream of water, one of the sources of supply of the Canastota water works. And the said board do hereby respectfully report as follows, to wit:

1 The said board found in the upper lot four heifers. The water in the stream in said upper lot was clear and to all appearances in good sanitary condition.

2 In the lower lot said board found 14 cows. The water in the stream in said lower lot was clear and to all appearance was in good sanitary condition.

3 The water at the lower end of stream in said lower lot, near town line, runs through an especially marshy and swampy place.

4 Said board found no cattle standing in said stream in said lots on said premises.

5 From information, investigation and knowledge, the sanitary conditions existing at the present time in said stream on said premises are in full as good condition, if not better, than they have been during the past 20 years.

(Signed) THOMAS MITCHELL
DR. J. R. EATON
*Health officers*
F. C. BLOCK
*Supervisor*
R. O. COOK
E. D. WALRATH
C. CHAPMAN
*Justices of the peace*
W. I. TYLER
*Clerk*

ALBANY, N. Y., *May* 22, 1901

FRITZ C. BLOCK, *President Board of Health, Town of Sullivan, Chittenango Station, N. Y.:*

Dear Sir—I am in receipt of a communication without date signed by yourself and other members of the board of health of the town of Sullivan, and note the failure of the board to enforce compliance in the case of R. D. Button with the rules and regulations adopted by this Department for the sanitary protection of the public water supply of the village of Canastota.

In reply you are informed that the board of water commissioners of the village of Canastota have been furnished with a copy of the report of the board of health of the town of Sullivan, with the advice that they proceed as provided by section 71 of chapter 661 of the laws of 1893, as amended by chapter 251 of the laws of 1899, which is as follows:

"Section 71. The officer or board having by law the management and control of the potable water supply of any municipality, or the corporation furnishing such supply, may make such inspec-

tion of the sources of such water supply as such officer, board or corporation deems it advisable, and to ascertain whether the rules or regulations of the State Board are complied with. If any such inspection discloses a violation of any such rule or regulation relating to a permanent source or act of contamination, such officer, board or corporation shall cause a copy of the rule or regulation violated to be served upon the person violating the same, with a notice of such violation. If the person served does not immediately comply with the rule or regulation violated, such officer, board or corporation shall notify the State Board of the violation, which shall immediately examine into such violation; and if such person is found by the State Board to have actually violated such rule or regulation, the secretary of the State Board shall order the local board of health of such municipality to convene and enforce obedience to such rule or regulation. If the local board fails to enforce such order within ten days after its receipt, the corporation furnishing such water supply, or the municipality deriving its water supply from the waters to which such rule or regulation relates, may maintain an action in a court of record, which shall be tried in the county where the cause of action arose against such person, for the recovery of the penalties incurred by such violation, and for an injunction restraining him from the continued violation of such rule or regulation."

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

## CROTON WATER SUPPLY

### Mount Kisco Station

WHITE PLAINS, N. Y., *June* 3, 1901

Hon. DANIEL LEWIS, *Health Commissioner, Albany, N. Y.:*

Dear Sir—Upon the advice of the State Board of Health, fortified by the *surveys of the* department of water supply, and

approved by the members of the Academy of medicine of New York city, the city of New York acting under and in pursuance of chapter 189 of the laws of 1893 acquired the fee of a tract of flat land at Mount Kisco, Westchester county, New York, and removed the buildings, barns, outbuildings, etc., for the sanitary protection of the water supply of the city of New York. The New York and Harlem railroad company, as the owner of adjacent property, has offered to build a new depot at Mount Kisco, and the board of trustees of that village have instituted proceedings to acquire the right to construct and maintain a driveway to the depot over the city's property with the right of course for teams which come for passengers to stand waiting for trains, etc. The department of water supply, in order to protect the city's health, has refused to give this consent unless it is clearly shown that such use would not injuriously affect the water supply of the city of New York. In view of the fact that we had the pleasure of operating in conjunction with your Board for many years, I am instructed to write you and ask whether or not you will cause an examination of the question to be made. If you desire to see the maps and have a detailed explanation of the matter, I can meet you in New York almost any day that you are there on business.

Awaiting your reply, I beg to remain,

Yours very respectfully

H. T. DYKMAN

*Counsel in charge*

ALBANY, N. Y., *June* 17, 1901

*Chief Engineer of the Croton Water Department, New York City, N. Y.:*

Dear Sir—At the request of the village board of trustees of Mount Kisco I have inspected the proposed location of the new depot of the Harlem railroad and the space which the trustees desire you to permit for the use of the roadway to the depot and then turning at right angles across to the street

parallel therewith, with which position I have no doubt you are familiar.

I see no objections from a sanitary standpoint to the opening of this road for this purpose in accordance with the plans as shown on the map furnished me by the board of trustees. In my judgment no possible contamination of the Croton water could result from such a road providing the roadway and gutters are properly constructed and then kept clean.

Yours truly

DANIEL LEWIS

*Commissioner of Health*

# Investigations by Order of the Governor

# YONKERS

## Smoke nuisance

Pursuant to the order of the governor issued under date of October 7, 1901, a hearing was held at the Getty house in the city of Yonkers, October 15, 1901, in the matter of the alleged nuisance caused by the use of soft coal at the power-house of the Yonkers railway company.

A number of witnesses having testified to the fact that a nuisance was caused by the use of soft coal by the Yonkers railway company, a representative of the company being present at the hearing gave assurance that the use of soft coal would be abandoned.

No complaints having been received since the date of the hearing, and inspections having been made by representatives of the State Department of Health since that date, warrant the statement that the cause of complaint has been removed.

# SARATOGA SPRINGS

Under date of March 30, 1899, an order was issued by the governor requiring the village of Saratoga Springs to construct a sewage disposal plant in that village.

During the past year the sewer commissioners have had prepared plans of proposed sewage disposal works which have been examined by the consulting engineer of this Department, whose report follows:

ENGINEERING SCHOOL OF UNION COLLEGE

SCHENECTADY, N. Y., *November* 26, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—In the matter of the Saratoga Springs sewage disposal plans made by Messrs. Snow & Barbour, engineers, Boston, Mass., which you submitted to me for examination and report as to their compliance with the requirements of the order of Governor Roosevelt of March 30, 1899, I beg to report that I have examined the general plans submitted and have studied

them with reference to the very unusual conditions under which the system will be obliged to operate, arising from the excessive range in the amount of sewage to be treated during the different seasons of the year and the rather high degree of purification which the circumstances of the case demand.

The village of Saratoga is to be congratulated on having secured so comprehensive a consideration of the problem by its engineers, and in the main so satisfactory a design for its disposal system. The general plan adopted by the engineers appears, except in one particular, to be unquestionably the best and most feasible solution of the problem, and in this particular—the adoption of a location and plan involving the pumping of the sewage instead of gravitational flow—the difference in results will be mainly financial rather than technical and may be left to the commission and the engineers. The plans submitted do not show the minor details of construction, and I am basing my opinion of the system on the general plans which accompany the report of the engineers, and which are dated October 1, 1901. While I am prepared to recommend the approval of the plans submitted, there appears to be several points to which you may or may not think it necessary to call the attention of the Saratoga authorities:

1 The estimated first cost of construction appears to be remarkably low, and it is not at all improbable that it will be exceeded in execution.

2 The estimated annual cost of operation appears to be very low, and it would appear to be attainable only on the concurrence of the most favorable conditions in all the features involved.

3 The smooth running of the plant in operation will be dependent on the reliability and regularity of action of automatic devices for the stopping, starting and regulation of speed of the pumps at the pump station, and on automatic devices for the distribution of the septic-tank effluent to the four different groups of filter beds, and occasional irregularities of action should be expected and provided for in the final design and in the management.

4 The present knowledge as to the rates of filtration of septic-tank effluents on natural sand filters is limited, and expe-

rience may show that lower rates and larger areas than are here provided may be necessary.

5 Notwithstanding that the present level of ground-water is considerably below the plane of the bottoms of the proposed filter beds, the possibility of the ground-water plane being raised by the large additions of filter effluent to it to an extent to encroach on the active portion of the filtering material, should be considered as not improbable, or at least not impossible, and provision should be made for preventing such encroachment should it occur by either a lowering of the main underdrains or provision for adding branch underdrains whenever the necessity may arise.

In conclusion I beg to say that I consider the plans in general well designed and well adapted to the difficult case in hand, and with the suggestions above made I recommend that the plans in general be approved.

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

The recommendations of Professor Landreth having been complied with by the authorities of Saratoga Springs, the plans of a proposed sewage disposal plant were approved January 22, 1902.

ALBANY, N. Y., *December* 5, 1901

H. F. THOMAS, *Clerk Sewer, Water and Street Commissioners, Saratoga Springs, N. Y.:*

Dear Sir—I enclose herewith copy of a report made by Prof. Olin H. Landreth upon his examination of plans and specifications of proposed disposal works for the village of Saratoga Springs.

Before taking final action on the plans submitted your attention is called to recommendations 3, 4 and 5 of Professor Landreth's report, with the suggestion that they be submitted to Messrs. Snow & Barbour for such explanation as they may desire to make.

Very respectfully,

DANIEL LEWIS

*Commissioner of Health*

# GUILFORD CREAMERY

*To the State Board of Health of the State of New York:*

Whereas, In the opinion of the undersigned, inhabitants Guilford Center and vicinity, a nuisance exists that is a menace to health in that it contaminates the waters of the outlet of Guilford lake, said contamination being caused, as we firmly believe, by the sewage emptied into said waters by or under the direction of a corporation doing business in the sale of milk and the products derived from milk, located in the village of Guilford, N. Y., under the title or name of the Guilford cooperative creamery company.

We therefore respectfully petition your honorable Board that they take immediate action in the matter and abate said nuisance if such is found to exist.

Dated Guilford Center, N. Y., July 1, 1901

RUFUS BOLSTER
ALBERT C. SALLS
EDWIN M. WATROUS
MRS. D. FISHER
MARTHA D. WIMER
C. S. RICE
O. B. PARKER
D. PARKER
HENRY E. ENDTER
J. A. WILLIAMS
W. A. HUMPHREY
CHAS. BURRIS
ANDRE W. HAYNES
ASA TYLER
G. A. RICHARDS
S. S. BENNETT
JOHN AUSTEN

GUILFORD CENTER, N. Y., *July* 3, 1901

*To the Members of the State Board of Health, Albany, N. Y.:*

Dear Sirs—There is a cooperative creamery at Guilford, N. Y. They receive about 24,000 pounds of milk daily. The whey and

all slops, etc., are run into a brook or the outlet of Guilford lake. This runs through the village of Guilford Center, N. Y., about 1½ miles from Guilford. This brook runs through my land, and the water has to be used by my stock, etc., the year round. This brook is a great nuisance now; it smells terrible. You can smell it day and night; and it is one of the greatest nuisances. There will be lots of sickness if this thing is not stopped at once. I want you to look into this and if found a nuisance I want it abated at once.

Yours truly

O. B. PARKER

*To the State Board of Health of the State of New York:*

Whereas, We the undersigned have heretofore signed and filed with your honorable body a certain petition or request that a nuisance existing along the Guilford creek in the town of Guilford, occasioned as we claimed by the placing of refuse matter in said creek from a certain creamery existing at or near the village of Guilford, N. Y., and which said nuisance has been abated;

Now we desire and hereby petition that no other or further proceedings in the above matter be taken on our account, and request that said petition or complaint heretofore filed by us be construed as complaining only of the nuisance caused by said creamery as aforesaid.

Dated February 17, 1902

O. B. PARKER
J. A. WILLIAMS
G. A. RICHARDS
C. S. RICE
ASA TYLER
RUFUS BOLSTER
A. W. HAYNES
A. C. SALLS
D. PARKER
J. AUSTEN
MRS. D. FISHER
HENRY E. ENDTER

ENGINEERING SCHOOL OF UNION COLLEGE

SCHENECTADY, N. Y., *August* 22, 1901

DANIEL LEWIS, *Commissioner of Health, Albany, N. Y.:*

Dear Sir—Agreeably to your instructions of July 22d I investigated on August 1st the case of the alleged pollution of Guilford creek by a creamery at the village of Guilford, N. Y., and beg to submit the following report of the same:

The stream in question is the outlet of Guilford lake, an artificial lake formed by damming the outlet of a pond, and as the waters of the lake are drawn down for water-power purposes the volume of the stream is quite variable. Its average discharge does not probably exceed five feet a second. At Guilford village the cooperative creamery company has a plant handling about 15,000 pounds of milk per day from which butter and casein are made, and the whey then discharged with all washings and other refuse into the stream in question. The milk after separation is soured by sulphuric acid, of which about 20 pounds per day is used. The drain from the creamery discharges into a mill pond through which the stream passes The condition of the stream, and particularly of the pond, is foul and disgusting in the extreme. The banks and bottom of the pond are covered with deposits of filth, including curd, slime from the whey and decomposing matter from privies and garbage dumps, the creamery waste constituting the larger part of the polluting matter and the part which causes much the greater part of the stench arising from the pond. The water of the creek for a long distance below the creamery is discolored, turbid and sour, and the bed and banks of the creek rank with aquatic growths of low order and stranded matter adhering to the same and to the stones.

The condition of the pond and the stream for a long distance below constitutes an abominable nuisance, and the health officials of the town are remiss in their duty in not having abated the conditions, which have been brought to their notice by complaints from residents along the creek. In addition to the pollu-

from the creamery I observed a half dozen or more privies g the stream that were placed directly over the water be- s a larger number located so near the creek as to render it ssible that the washings therefrom should not reach the ım. There are also numerous manure piles, hogpens and try yards situated immediately on the bank of the creek, the stream appears to be the usual dumping ground for age and other domestic refuse.

ıe waters of the creek are not only used for watering stock g the valley, but they actually flow directly into one of the rvoirs of the Sidney water company, from which reservoir. ever, the company has not yet drawn any water this sea-

While the stream undergoes some purification from the ser forms of pollution by its flow for the four or five miles veen Guilford and the reservoir in question, I have no idea the water is rendered safe for potable purposes, and it is reservoir from which I had a sample taken for bacteri- ical examination, and concerning which reservoir I advised local board of health of the village of Sidney to order the er company of that village not to draw water from till her orders.

asmuch as the health officer of the town of Guilford, Dr. . Palmatier, of Mount Upton, in which the unincorporated ıge of Guilford is situated, has called official attention of r Department in his report of July 8, 1901, to the sources of ution in the village of Guilford *other* than the creamery, I e thought proper to include a consideration of them in my stigation and in my recommendations, which are as follows:

That under authority given by section 25 of chapter 661 of laws of 1893, you direct the president of the town board of th of Guilford to convene his board and to issue and enforce ers for the following sanitary improvements, all of which I sider essential to remove conditions which are extremely ınitary and are clearly menaces to the public health:

(a) The absolute and permanent discontinuance of the dis- ıarge of milk, whey, curd, acid or any water or washings

containing the same into Guilford creek or into any water-course or drain by which it may enter the said creek.

(b) The cleaning and removal from the mill pond, into which the creamery waste has been discharged, of the greater part of the accumulated curd and sludge arising from or caused by the creamery refuse, and the burying of the same or its treatment and removal to such places as shall be sanitarily safe.

(c) The removal of all privies that are now placed over or so near the Guilford creek or tributaries as to drain or wash into the same, and the removal of all accumulated matter from the same and its proper burial.

(d) The removal of all hog pens, manure piles and poultry yards from the immediate proximity to the banks of the stream or its tributaries, and their disposition as well as the disposition of stables and garbage dumps, in such places and conditions as that drainage from the same shall not pass into the stream without first having passed over or through such an extent of soil as to have had all floating or suspended matter thoroughly removed.

(e) The removal of the private sewers now discharging into the creek or ponds, and the substitution of some efficient means of treatment or purification of the sewage from the same by either filtration, septic tanks, improved cesspools, or subsoil irrigation, the methods to be employed being first submitted to the State Department of Health for approval.

(f) The enactment and enforcement of rules and regulations under section 21 of chapter 661 of the laws of 1893, for the protection of the purity of the stream from the above-named and any other sources of pollution.

2 That the town board of health of the town of Guilford be directed to submit a report showing in detail what steps have been taken in the enforcement of the above-mentioned orders, a list of each kind of nuisance abated and a copy of the rules and regulations enacted.

The creamery company is incorporated, I was informed, under the name of the Guilford cooperative creamery company, the

stock being owned locally and mainly by farmers who contribute milk to the factory. The officials of the corporation are as follows:

Wm. B. Mead, Guilford, president; E. D. Bush, Guilford, secretary; Andrew Stratton, Guilford, manager.

In response to request from Messrs. Bush and Stratton for advice as to a method for disposing of the whey and other refuse in a sanitary manner, I suggested to them, unofficially and informally, that pending any other method meeting the approval of your Department they would find the method of sprinkling the whey and refuse on the land a harmless and satisfactory method of disposing of it. I also informed Mr. Stratton that the corporation would be expected not only to discontinue the discharge of whey and other refuse into the stream or pond, but that it would also be responsible for removing the accumulated matter coming from the creamery to the extent necessary to thoroughly abate the existing nuisance.

Very truly yours

OLIN H. LANDRETH
*Consulting engineer*

ALBANY, N. Y., *September* 17, 1901

CHAS. G. BROOKS, *President Board of Health, Town of Guilford, Mt. Upton, N. Y.:*

Dear Sir—I transmit herewith copy of a report made by Prof. Olin H. Landreth upon his investigation of complaints made to this Department concerning the pollution of Guilford creek by the discharge therein of refuse from a creamery.

As the conditions found to exist warrant action by this Department, as provided by section 25 of chapter 661 of the laws of 1893, you as presiding officer of the board of health of the town of Guilford are hereby directed to convene such board, which shall issue and enforce orders for the following sanitary improvements:

"(a) The absolute and permanent discontinuance of the discharge of milk, whey, curd, acid or any water or washings con-

taining the same into Guilford creek, or into any watercourse or drain by which it may enter the said creek.

"(b) The cleaning and removal from the mill pond, into which the creamery waste has been discharged, of the greater part of the accumulated curd and sludge arising from or caused by the creamery refuse, and the burying of the same or its treatment and removal to such places as shall be sanitarily safe.

"(c) The removal of all privies that are now placed over or so near the Guilford creek or tributaries as to drain or wash into the same, and the removal of all accumulated matter from the same and its proper burial.

"(d) The removal of all hog pens, manure piles and poultry yards from the immediate proximity to the banks of the stream or its tributaries, and their disposition as well as the disposition of stables and garbage dumps in such places and conditions as that drainage from the same shall not pass into the stream without first having passed over or through such an extent of soil as to have had all floating or suspended matter thoroughly removed.

"(e) The removal of the private sewers now discharging into the creeks or ponds, and the substitution of some efficient means of treatment or purification of the sewage from the same by either filtration, septic tanks, improved cesspools, or subsoil irrigation, the methods to be employed being first submitted to the State Department of Health for approval.

"(f) The enactment and enforcement of rules and regulations, under section 21 of chapter 661 of the laws of 1893, for the protection of the purity of the stream from the above-named and any other sources of pollution."

You are further directed to furnish this Department with a report showing in detail what steps have been taken in the enforcement of the above-mentioned orders, a list of each kind of nuisance abated and a copy of the rules and regulations enacted.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

ENGINEERING SCHOOL OF UNION COLLEGE

SCHENECTADY, N. Y., *November* 11, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—In the matter of the orders issued to the president of the town board of health of Guilford, Chenango county, on September 17th, and the report of the president of the board of health dated October 12th, I beg to report that agreeable to your instructions I visited the locality on the 9th instant and had an interview with the president, Mr. Charles G. Brooks, supervisor of the town of Guilford.

From this interview it appears that the local board had issued no orders whatever, and that the orders sent you on October 12th were intended by the local board to be thus submitted to you for your approval before being issued, though the communication and the form of the orders would not indicate such intention.

I beg to recommend therefore that you direct the president of the local board of health to issue and enforce such orders as he with his board may deem necessary to carry out the instructions issued by you to him on September 17th. An examination of the orders prepared by the local board of health and information secured during my visit would seem to indicate that the president might further be advised or reminded:

1 That while a local board of health has full power to determine what conditions are nuisances and to order and enforce the abatement of such conditions, it has no power to stipulate the manner by which such conditions or nuisances shall be abated, but should leave that to the persons responsible for the abatement, viz, those responsible for the creation or the maintenance of such nuisances.

2 That the expense of abatement of nuisances is a burden on the person or corporation responsible for their creation or maintenance.

3 That the unsanitary conditions found by your Department to exist along the Guilford creek in the township of Guilford are nuisances or conditions detrimental to health and should be

abated as such and on this account, and that the examination and instructions of September 17th were made on complaints of citizens of the town of Guilford residing on Guilford creek, and not on the complaint of the Sidney water company nor the Sidney village board of health.

4 That any additional improvement of the conditions of the creek beyond the abatement of nuisances or of conditions detrimental to health, such as additional improvements needed to make it a suitable source of potable water supply, may be secured if demanded by the enactment of rules and regulations for the protection of the stream by the State Commissioner of Health under sections 70, 71 and 72 of the Public health law, and that such additional improvements, or at least certain of them, shall be at the expense of the municipality or water company whose water supply is benefited thereby.

5 That the local board of health having jurisdiction of the territory where the stream flows must determine what conditions are nuisances or conditions detrimental to health, and what are additional improvements.

6 That the orders relating to private sewers appear to omit the requirement that any plans for substitutes for the direct discharge into the creek must first be submitted to the State Department of Health for approval.

I am, dear sir,

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

ALBANY, N. Y., *November* 15, 1901

CHAS. G. BROOKS, *President Board of Health, Town of Guilford, Mt. Upton, N. Y.:*

Dear Sir—I am in receipt of your communication of the 6th instant in which you state, "This board understood the order sent here by the State Department of Health to require that a list of nuisances found and orders made in each case should be forwarded to you for your approval or rejection.

If you will refer to the communication addressed to you from this Department on September 17, 1901, you will find the following:

"As the conditions found to exist warrant action by this Department, as provided by section 25 of chapter 661 of the laws of 1893, you as presiding officer of the board of health of the town of Guilford are hereby directed to convene such board which shall *issue and enforce* orders for the following sanitary improvements."

After enumerating the nuisances to be abated, you were further instructed as follows:

"You are further directed to furnish this Department with a report showing in detail what steps have been taken in the enforcement of the above-mentioned orders, a list of each kind of nuisances *abated* and a copy of the rules and regulations enacted."

It will therefore be seen that it is the duty of the board of health of the town of Guilford to require the abatement of nuisances which are the cause of the pollution of Guilford creek, which is one of the sources of the public water supply of the village of Sidney.

In connection with this matter I desire to call the attention of the local board to the following:

1 That while a local board of health has full power to determine what conditions are nuisances and to order and enforce the abatement of such conditions, it has no power to *stipulate the manner* by which such conditions or nuisances shall be abated, but should leave that to the person responsible for the creation or maintenance of such nuisances.

2 That the expense of abatement of nuisances is a burden on the person or corporation responsible for their creation or maintenance.

3 That the unsanitary conditions found by this Department to exist along Guilford creek are nuisances or conditions detrimental to health and should be abated as such and on that account, in accordance with instructions given by this Depart-

ment under date of September 17, 1901, based upon complaints of citizens of the town of Guilford and not on the complaint of the Sidney water company nor the Sidney village board of health.

4 Any additional improvement of the conditions of the creek beyond the abatement of nuisances or conditions detrimental to health, such as additional improvements needed to make it a suitable source of potable water, may be secured by the enactment of rules and regulations for the sanitary protection of public water supplies under sections 70, 71 and 72 of the public health law.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

## TOWN OF LOCKPORT

### Eighteen Mile creek

LOCKPORT, N. Y., *August*, 29, 1901

Hon. BENJAMIN B. ODELL, JR., *Albany, N. Y.:*

Dear Sir—I enclose you herewith the minutes of a meeting of the board of health of the town of Lockport, held on the 8th day of August, 1901. This meeting was held for the purpose of taking some action toward abating a nuisance which exists in the said town of Lockport caused by the pollution of the waters of the Eighteen Mile creek.

The meeting was held pursuant to a petition filed by William F. Clark and others, stating that such a nuisance existed.

As you will see by the enclosed evidence, for some time past a number of mills in the city of Lockport have used the Eighteen Mile creek as a dumping ground for the refuse of these mills. You will also see by the evidence of a number of residents of

the town of Lockport that a few years ago the water was clear and fit for the use of cattle and other animals. At the present time, more especially within the past few months, the water is of such a filthy nature that it is not fit for animals to drink and they refuse to drink it. The water is black, full of sediment and the odor is offensive for a number of rods. The refuse which has been dumped into this creek by the mills has killed the fish, and unless the nuisance is abated the creek, which prior to this time has been a good fishing ground, will be entirely destitute of fish.

The mills which dump their refuse into this creek are the Lockport pulp company, the Traders' paper mill and sulphite pulp plant, Lockport paper mill, Niagara paper mills, Westerman rolling mill, the United indurated fiber company's plant and pulp mill and Cowles' aluminum works.

This meeting of the board of health was called for the purpose of calling the attention of the proper authorities to this nuisance that it might be abated or remedied as speedily as possible. The board of health had supposed the proper method was to call the attention of the State Board of Health to its condition, but were advised by their counsel that the proper method of proceeding was to notify the governor of the state. Pursuant to their directions I therefore request that you take the matter under consideration at your earliest convenience and have the necessary steps taken to abate the nuisance.

I shall be very glad to furnish you with any information or any other data necessary at any time.

Kindly advise me if it is necessary for us to take further steps at the present time than the course which we have already taken.

Thanking you, I beg to remain,

Very respectfully

H. M. DYSINGER

*Town clerk*

At a special meeting of the board of health of the town of Lockport on the 8th day of August, 1901, there were present: Leander Bickford, justice of the peace, president; Luther Forsythe, justice of the peace; Hiram Gregory, justice of the peace; Thomas Eley, justice of the peace; H. M. Dysinger, town clerk; S. A. Dysinger, citizen member; Dr. F. T. Carmer, health physician.

Absent: Charles Flagler, supervisor.

The board convened pursuant to the petition filed by William F. Clark and others, stating that a nuisance exists in the town of Lockport caused by the pollution of the waters of the Eighteen Mile creek in said town, and asking that the board take steps to abate the same.

The board were attended by the petitioner, William F. Clark, and others, who produced

EDWARD HATT, who, being duly sworn by the chairman, testified as follows:

"I reside in the town of Lockport; my age is 68; have resided in the town most of my life; I know the Eighteen Mile creek; I can't tell you where it starts; it comes through the city of Lockport; it then runs north, through the town of Lockport and the town of Newfane, and empties into Lake Ontario at Olcott; it is fed by the canal in the city of Lockport, and is also fed in part by springs from the hills here; I live right close to the creek; the city line is right in front of my place; the creek passes through my place about three-quarters of a mile as soon as it leaves the city; I have lived there on the creek and known the condition of its water 25 or 30 years; at the time I first knew it, it was in fair condition; good water, stock could drink it and you could go in swimming there; it was not entirely clear, although sometimes it would be quite clear, unless a storm came up; fish could live in it at that time; I should say it was at least 10 years ago when I first noticed that it was being contaminated—in 1890; there were times when it would be black and thick and smell bad, be a sediment in it; the stock drank it at first until this spring, but there were times when

they wouldn't drink it, for several years; it grew gradually worse down to 1900; in 1900 it was black, roilly, discolored; I should say there is more water now than there was before, probably increased by one-half; I know where the Red creek runs into the Eighteen Mile creek; I should say that was about three miles down from Lockport; I think the water is affected below that, but have not been down there; in certain places the creek was straightened last year, and I presume that to some extent disturbed bars of sediment in the bottom; at times it made it more roilly; so far as I know that killed no fish; the first time that the stock refused to drink this water was last Sunday, August 4th; I examined the water then; it was black, thick stuff; they couldn't drink it; it was all full of sediment, and smelled very bad, could smell it for rods; there appeared to be some kind of solution in the water that caused this; I was sitting on my stoop, and looking down the road I saw some boys hitching fish along on the bridge; I then went down there and I presume there were a thousand fish there, swimming around on top of the water, with their heads out; the water was all covered, half of the fish dying, turning on their backs; the creek was all full of fish; there were a great many dead and dying fish of all varieties; I went along at night down on my farm below and saw a great many other fish along there; I looked at the stock, and saw that they would not drink the water; they would smell of it and not drink it; fish lay all along both shores dead, a large number of them; there were some rock bass, some sunfish, and I saw one pickerel; as to the vegetation, it looks as though it were dying, with this black sediment lodged on it, on the grass and other stuff; I did not examine the vegetation closely; yesterday morning the water was in very bad shape; the water was roiled considerably and there was stuff running through it that looked like wool, the whole water was full of it; I placed a fanning mill sieve in it, having a one-quarter-inch mesh, and left it in the water four minutes. [Sieve is now produced.]

"In four minutes it filled the meshes of the sieve right up, so that I could not hold it in my hands, as the water was running swiftly; I could not tell you what the stuff was that was washed into the sieve; in the water it looked like wool all torn to pieces—greasy, sticky stuff; the sieve was placed in the open current, right at the corner of the bridge, in a depth of two or three feet of water, and where there is a rapid current; the water was as clear at that place as at any other place in the creek; I have paid no attention to my stock since, so do not know whether they have drunk the water or not; I cannot describe the odor of the water other than to say that it is a bad stench; I never smelt anything like it; the odor was due to the water and not to decaying fish; in the morning I was going to the Glenwood cemetery and saw this stuff where it first started to come down the creek; it came down by the bridge from the east and looked like soap suds; that was in the city; and when we came back after dinner was when they were taking these fish out; this soapy appearance lasted I should say about an hour, and then it would be dark colored, thick stuff; that evening when I went down along the creek I passed the spot where a spring coming from Mr. Clark's land discharges a stream of about six inches into the creek, and I could not tell you anything about the number of fish that were getting to that fresh water to keep alive; they couldn't breathe in the other water and were coming to this little stream."

FRANK A. PERRY, being called as a witness and being duly sworn by the chairman, testified as follows:

"I live about a mile and a half from the city line, northwest, on the Purdy road, in the town of Lockport—on the same road with the last witness, a little below him; have lived on that place 25 years; have known the Eighteen Mile creek during that time; I know where the creek formerly had its head—in the south part of the town here, but I think it is fed mostly from the canal; it is also fed from the watershed on the north side of the hill or mountain upon which Lockport is

located, but the most of its water comes from the canal; there are mills on this creek, in the city of Lockport; there is the Lockport pulp mill, the Traders' paper mill and sulphite pulp plant; the next is the John Jack mill, the real name of which is the Lockport paper mill; the next is the Niagara paper mills, and then there is the iron rolling mill, and the next is the Indurated fibre company's plant and pulp mill, and then there is the aluminum works; those are all the mills upon the creek that I know of; I drove over there a couple of times and saw sediment and stuff being discharged from the Lockport paper mills into the creek; I saw some bad looking stuff coming out of a couple of spouts, running right into the creek; I cannot tell you what it was; that day it was red, and then I think I drove over there with Mr. Clark one day to show him where it was coming from, and that day it was black; I know what the condition of that water was 65 years ago; originally it was a good clear stream, except for what sawdust and slabs came down it; there were lots of fish in it; the stock drank it; the first I knew of its being contaminated to do any damage was the time Brown started that flax mill and dumped lime into the creek, probably 35 years ago; that did not last long, and the water cleared up again; then it was clear down to 12 or 15 years ago, since which time stuff has been coming down it; it has been growing worse, and has been a good deal worse the last two or three weeks; a week ago last Monday was the first I noticed fish coming down the creek; I keep my stock away from the water altogether, and have done so for three weeks; there is another little creek on my place, and the water goes back into it, and I allowed my stock to drink there, but three weeks ago I shut off on it altogether because I was afraid of that water; the water is worse Sundays than it is week days, probably because it is lower, and there is the same quantity of refuse to a smaller quantity of water; three weeks ago I noticed the fish coming down the creek, Monday morning, and a week ago last Monday was the worst of it, and last Monday the same thing again; I saw many dead fish floating, and I counted 148

in about two minutes last Monday, the 5th of August; did not notice the effect it had on vegetation; there has been an odor from the creek all along; the dead fish begin to smell now; I can't tell you about the number of fish, but I counted in about two minutes 148 fish; there is a cut on my place where they cut a little elbow off and put in netting to stop the water from going in below, and I should think probably there was a bushel of dead fish lying in there, and I poked them in the water Monday morning and poked some more off to-day noon; a week ago Monday there were dead fish almost to Charlotteville, which is about five miles down the creek, about three or three and one-half miles below the mouth of Red creek; I noticed all kinds of fish, bullheads, small pickerel, suckers and one or two black bass."

On being recalled the witness testified as follows:

"The reason that this water smells so much more on Sunday than it does on week days is because the water is lower and leaves exposed to the air certain portions of the bottom and sides of the creek, which is coated with a deposit of this black, sticky stuff which caused the smell; even the logs in the creek are coated with it, and it cannot be washed off with ordinary washing; it actually has to be scraped out of a pail; the creek, I guess, is about 60 feet wide at the bottom; it is not now so deep as it was, being on the average from three to four and a half feet deep, and in some places it is six; there is rather a swift current."

JAMES M. ELDRIDGE, being duly called as a witness and duly sworn by the chairman, testified as follows:

"I live in the town of Lockport; am most 71 years of age; I am a farmer; I live on the Stone road; perhaps 60 rods from Mr. Hatt, on the other side, west side of the creek; the south part of my land is right on a square with the city line; the city line there is the center of the state road, which runs nearly east and west; have known the Eighteen Mile creek for 35 years, but never paid any particular attention to it until within the last three years; three years ago I had a past-

re near the creek and the cows would drink the water readily
ost of the time; but for the last two or three weeks the cow
on't touch it at all, and I pump water and carry it to her from
e well, or lead her to the well; did not notice what effect it had
vegetation; have noticed an odor from the creek more or less
r since I went to live there; it is quite offensive; we get the
or worst when the wind is in the east, northeast or southeast;
netimes the water is dark or reddish, dark brown or reddish,
l has an oily appearance at times; last Sunday was the first
oticed anything in regard to the fish; I went down along the
ek and saw quite a number of fish in the little eddies dead; I
nk the fish are not there now, the water having come up
ce; when the fish are killed they catch in eddies along the
ore, become putrid and offensive to the smell; the cattle won't
nk the water."

On being recalled the witness testified as follows:

"Thirty-five years ago this fall, commencing in August, I
ew four barrels of water from the creek every day to water
stock through the dry season, as it was very dry that year;
was clear and as neat as a pin, and I took it out of the creek,
ir barrels every day; at the present time there is ordinarily a
iod of high water and low water each day, although some-
es it will keep right up; there is generally a little difference
the morning; at the low period of water it exposes the edges
the bank and stones, with this sediment settled on it, which
omes very offensive as soon as the air strikes it; it is in a
aying condition; this variation in the stream, is caused by the
ning and shutting of the gates of these mills here."

FRED SMITH, JR., being called as a witness and being duly
orn by the chairman, testified as follows:

"I live in the town of Lockport, on the Purdy road; the creek
as through my place for a distance of about 80 rods; Mr.
ark's line abuts side of mine; I have lived in this place two
ars and a half; have been in swimming as a boy in the Eigh-
en Mile creek, 20 years ago, hundreds of times; there were
en fish in the creek; I have known the creek where I now live

going on three years; during that time there has been a smell or stench coming from it, which I could smell for 20 rods, clear to my kitchen—a very offensive smell; I have a pair of colts and some cows which are obliged to drink this water or go to the neighbors, as I have but one well and that is in the house; the colts I turned out the 10th day of June to pasture; they are three years old and in fair condition, but they did not gain any to speak of until I put them in the barn, and I think it was the water that affected their health; it certainly keeps the flesh off, for I usually have no trouble to keep flesh on horses; I have not noticed as to the effect of the water on vegetation; Sunday evening last, a half or three-quarters of an hour before sundown, my attention was called to the dead fish, and I went down and saw quite a good many fish floating down; they continued to float until the next day (Monday) noon; where the stream is slow they collected on the banks; if allowed to lay there, they eventually become putrid and offensive; Sunday night I could smell the fish clear to the house; I should say that it killed them in quantities large enough to become dangerous to the public health; sometimes the water appears to be getting clearer; I noticed Monday forenoon that the creek was getting lower and I said to my boy that the water was getting a little clearer and he might water the team there that day, but about noon the water commenced to get black; and this forenoon I noticed that it was reddish; there is nothing that could produce these changes, that I know of, except the paper mills here in the city; there is nothing else above me that contaminates the water, that I know of, except the refuse from these mills; there is a man living south of me who has complained of ill-health all summer, but I do not know that he charges it to the creek."

NATHAN WILSON, being called as a witness and being duly sworn by the chairman, testified as follows:

"I reside about four miles north on the turnpike; I am on the north line of the town of Lockport; the creek runs through my place; following the creek, I live about a mile from the witness Smith; the creek runs nearly half a mile through my place;

have been acquainted with the water in this creek as long as I can remember; 20 years ago it was middling clear water; the stock drank it and fish lived in it; I have lived in this place only five years, and during all of that time the water in this creek has been polluted; during that time the water has been at times clear red; sometimes black; I noticed, I guess, about four weeks ago that it was thick, as though it had pulp in it; I noticed that last summer the horses wouldn't drink it if they could help it; there is an oder from it at times, and it is pretty strong this summer; the last few weeks it has been worse than it has heretofore been; during the last few weeks it has been black mostly, and thick with a sediment of some kind; I have noticed at times that it would suddenly get thicker, or become of a different color, as though something had been dumped in it and was floating down; that will happen every few days; in my opinion the water is worse Sundays than it is week days; that is for the reason that there is the same amount of sediment and a lesser amount of water; I have seen dead fish all the while for the last two years; sometimes there would be quite a few every little while; I have seen more this summer than I have before; I did not see them last Sunday because I was not at home, and Monday I was not near the creek; my stock does not drink the water and never has since I have been there if they could help it; we get a smell from the water, and from dead fish and decaying vegetation caused by it; it is very offensive; I think that it would be injurious to my health if it were kept up; I noticed that the cows, going into the creek to keep the flies off, have sore bags, which is caused by this water; it does not make sores on them elsewhere, unless the skin is bare."

WILLIAM F. CLARK, being called as a witness and being duly sworn by the chairman, testified as follows:

"I live in the town of Lockport and have lived there 57 years; I live about a quarter of a mile northwest of the city line, and my farm is bounded on the east by the Eighteen Mile creek for a hundred rods; have known the water in the creek for 21 years; when I first knew it, it was like all other natural streams that nothing

we have in this county; it was clear, of course, at times; in the spring of the year and during freshets it was roilly, but we could wash sheep in the water very comfortably, no bad results from it; but the last washing of sheep I did there my clothing and my skin and body were so sticky that you couldn't wash it off with soap, from something that you got onto you from the waters of this creek; that was 10 years ago; I should say the water was worse now than it was then, although I haven't been in the creek; I have a herd of 28 cows which since this spring have been put into the pasture adjoining the creek; they walked into the water, but I noticed they didn't drink; they would come to the house and drink; the tips of their bags would get sticky from touching this water, and although the teats appear to be clean and not dirty, yet when you come to milk you would find some foreign substance there; I fenced them away from the creek and wouldn't allow them to go there as soon as I discovered this; the creek water has been more offensive and more polluted this year than formerly; the water first commenced to show these bad signs this year at about the finishing up of the excavating in the creek, when they drew that water out, and I noticed a very strong stench, and along in warm weather this year I have noticed this stench whenever I went near the creek; this morning I noticed another thing in relation to the vegetation—I noticed that the water lilies in the creek were dead, the leaves were dead; I went to the side of the creek and pulled out some grass that was hanging over, and here is some specimens of the grass. [Witness produces specimens of grass.]

"I examined this grass and found that it was dead, and there is a great deal of this grass, where it han[illegible]gs over the edge into the water; some of the grass, just the ends [illegible] of it, stick over into the water and this stuff accumulates upon [illegible] it, and when the water a mass des and the creek goes down, it dri[illegible]es up and kills it, making grass c[illegible] of decayed vegetable matter w[illegible]hich has a bad odor; this slimy, grea[illegible]n be picked up by standing o[illegible] dry land, covered with a be covered with some sediment; if examined th[illegible] the creek, one shredd[illegible]ough a glass it appears to [illegible]ek runs nearly half a [illegible]d substance; this blade of

ı which I produce is an ordinary blade of grass which the
nent has enlarged to the thickness of a lead pencil, so that
.eaf of grass is as large as a lead pencil, with this sediment;
of a dark brownish color and of about the consistency of soft
; in being frequently to the creek I have seen dead fish along
ɔorder of the creek; but last Sunday evening I went to a pear
ard which I have on the bank of the creek and at the mouth
little ravine where spring water discharges into the creek;
ıttention was called to the agitation of the water, just in this
ɜ pond right at the mouth of this little stream; I looked into
nd it was full of fish sticking their heads up to the top, and
e were lots of dead fish floating around in the water, and
e a lot of them on the side; they seemed to be trying to get to
fresh water, this little stream, which can be carried in a
e-inch pipe, but the creek being low there was no chance for
n to get into it; they seemed to be crowding each other very
k there to get this fresh water, and I could have thrown out
ıshel of them with a shovel in two minutes; they appeared to
ery logy, didn't appear to be lively at all; the fish moved very
'; I noticed another place a little below where another little
ım of water empties into the creek; along the bank I counted
uckers and one pike, and three black bass lay on the shore
l, and it was in a space not to exceed 10 feet; the water is
dark colored, full of sediment, floating and in suspension;
erday morning I put that sieve in. [Witness produces sieve
luced by witness Hatt.]

Sometimes this creek has the appearance of a dirty pink
r, appears to be coloring of some kind that is thrown into it
.rge quantities; a short time ago it was of a dark bluish cast
an oily substance on top; I was in the city Monday and
ɜed the canal, and the canal water was not the color of this
k water; this creek is fed in part by the canal, in fact it is
ly fed from su ater, and the balance is spring water; there
ɔ cause fc lution of this water, except the mills that
ɜ mention Perry, that I know of; they are all situated
ıe city of I there is nothing in the town of Lockport

that can pollute it, so that the water comes into the town of Lockport already polluted by what has been put into it in the city of Lockport; I consider that this water, which has become so much worse within the last three weeks in odor and in properties which kill grass and fish, is injurious to the public health of the people living along the creek; people living on the east side of the creek appear to be under the doctor's care very much; in the city of Lockport there is Mrs. Olsey, complaining of rheumatism, asthma, of diseases caused, as physicians claim, by impure air; then there is Mr. Dennison, a neighbor, in the same condition; also Mr. Sperry, who has been mentioned here, and Mrs. Myrick; these four or five people live in a distance of less than a mile on the east side of the creek, where the prevailing winds drive the miasma in their direction more than it does in any other; and the condition that the water is now in produces quantities of dead fish and dead and decaying vegetation, fermenting on the creek banks; we are not able to use the water for any purpose; all that the creek amounts to is a sewer for the mills; this morning I noticed at one mill—that of the Indurated fibre company—a pile of refuse matter lying at the back door of one of their buildings that contains probably two or three tons of decayed rags, bags, paper and such matter as that, and when the pile gets big enough it tumbles off and goes into the creek; there is no other place for it to go; that mill is in the city and not the town of Lockport; I consider this water and creek in its present condition a nuisance and a dangerous one; it is most certainly detrimental to health; where the fish have not been washed away, they smell badly; they have just commenced to smell now; and in the natural order of things, the odor is going to be worse unless they are removed; when the creek is filled with water we do not get the odor so strongly, but when it is full and running swiftly it stirs up a great deal of this sediment on the side of the creek and the stench is very strong; the reason that it smells worse when the water is low is because there is more of the sediment exposed to the air; if you will notice the banks, they are all of a dark brownish color when the water is low, stones on the side of it are covered with a

dark substance of the same color; I am certain it is not caused by bars already in the creek being washed down; I remember when the creek was straightened and these bars stirred up this last winter and spring and I saw no bad effects, and there was no worse odor perceptible; it is the daily refuse that is being thrown in it; it is worse the last month than it has been at any time I have known the creek; I do not know whether the water affects the fish as far down as Charlotteville."

On being recalled the witness testified as follows:

"I am acquainted with the different mills on the creek and their location; I know that the Traders' paper company have added to their plant this year a sulphite pulp mill, which started up a month or so ago, or within the last 60 days; that it used sulphuric acid in its process of manufacture, and it discharges its refuse into the creek; I believe that the increase in the pollution of this creek is caused by the discharge of such additional refuse; I understand that the mills located above, on the upper ground, have laid a sewer pipe to convey this stuff that they empty, the refuse from their vats, by the lower mills, as they so contaminated the water that the lower mills could not use it; that is one of the reasons that they claim the water was so low last Sunday, they were laying pipe for the conveying of this refuse from these tanks, these purifying vats, to points below the other mills so that it would not contaminate the water they had to use; I understand that that was caused by complaints made by the Lockport paper mill, that the acid discharged by the Traders' sulphite plant ate the felts so that they could not run their pulp on these felts."

JOHN LAMONT, being called as a witness and duly sworn by the chairman, testified as follows:

"I live in the town of Newfane; I own a farm on the opposite side of the road from the Eighteen Mile creek; as I was crossing the bridge on the Ewens road in the town of Newfane a week ago to-day (Thursday) going to my farm I saw dead fish floating down the creek, and I noticed the appearance of the water, which was dark and dirty looking, black; that is perhaps a quarter of a mile from the Lockport line."

Evidence closed.

By Mr. FORSYTHE—

Resolved, That upon the testimony submitted at this meeting, the town board of the town of Lockport hereby find and declare that the contamination of the waters of the Eighteen Mile creek in said town of Lockport, by dumping therein mill refuse of a poisonous and otherwise dangerous character, to be a nuisance, and dangerous to life and health within said town.

Resolved further, That said nuisance and the causes thereof originate in and are caused by the mills and manufactories located on said creek within the city of Lockport, and outside of the jurisdiction of this board.

Resolved further, That the attention of the proper authorities be called to the condition above set forth, to the end that said nuisance may be permanently abated.

Said resolutions were unanimously adopted.

C. W. FLAGLER,
*Supervisor*
HARVEY M. DYSINGER,
*Town clerk*
LEANDER BICKFORD,
*Justice of the peace*
LUTHER FORSYTH,
*Justice of the peace*
HIRAM GREGORY,
*Justice of the peace*
THOMAS ELEY,
*Justice of the peace*
S. A. DYSINGER,
*Citizen member*
F. P. CARMER, M. D.,
*Health officer*

ENGINEERING SCHOOL OF UNION COLLEGE

SCHENECTADY, N. Y., *October* 14, 1901

DANIEL LEWIS, *Commissioner of Health, Albany, N. Y.:*

Dear Sir—On September 13th you referred to me a complaint from the board of health of the town of Lockport, Niagara

county, dated August 29th, which had been received by Governor Odell and by him referred to you. With this complaint and the accompanying evidence taken by the local board of health, you directed me to proceed to Lockport for the purpose of investigating the matter covered by the complaint and to report the results to you with such recommendations as I might deem necessary.

In pursuance of these directions I made the needed examinations on September 16th, 17th and 18th, and since that time have collected further information bearing on the matter, and beg to submit the following report:

The complaint in question refers to the pollution of Eighteen Mile creek by the discharge into the same of refuse from a number of mills and manufacturing concerns in the city of Lockport, producing as alleged unsanitary conditions, bad odors, the killing of fish and the rendering of the waters of the said creek unfit for agricultural purposes.

The mills referred to in the complaint as discharging their refuse into the creek are as follows:

The Lockport pulp company.

The Traders' paper mill and sulphite plant.

The Lockport paper mill.

The Niagara paper mills.

The Westerman rolling mill.

The United indurated fibre company's plant and pulp mill.

The Cowles aluminum works.

### DESCRIPTION OF THE STREAM AND ITS PRESENT CONDITION

The stream in question (Eighteen Mile creek) is originally and naturally a very small stream rising southeast of the city of Lockport, flowing northerly through the city about centrally or somewhat east of the center of the city, thence northwesterly toward and finally into Lake Ontario at Olcott after having joined other and larger tributaries north of the city. The present stream is, however, largely of artificial character, having received for many years, and substantially ever since the building of the Erie canal, large amounts of water taken from the

canal and discharged into the creek after having been used for waterpower by a number of mills and factories situated along the bed of the creek north of the canal. The discharge of the creek varies somewhat with the amount of water that can be spared from the canal, but at the ordinary condition is not far from 300 cubic feet of water per second, while the natural flow of the stream, unaided by canal water, would probably be considerably less than one-tenth this at ordinary creek conditions. The southeasterly or upstream portion of the creek south of the canal has therefore the normal creek flow, while after passing under the Erie canal it receives enormous additions to its flow. The portion complained of is the northern part between the lowermost mill and the town line, between the towns of Lockport and Newfane, which line is about four miles north of the city of Lockport. The portion covered by the complaint is about four miles in length, though citizens along the line, including some residing in the town of Newfane, state that the same conditions prevail through the town of Newfane.

After the stream emerges from the gorge cut by it in its passage down the topographical escarpment between the southerly or high plateau and the northerly or lake level plateau, the stream flows through alluvial formation, with low banks and broad bottom lands flanking the stream.

The banks, already nearly filled by the abnormal flow of the creek, are readily overflowed by moderate additions to the flow so that the bottom lands are frequently overflowed. This is said by the residents along the creek to occur most often after the canal navigation closes, when larger amounts of water can be spared from the canal than during the canal season. It is also stated by several persons, and contradicted by none, that decidedly more water passes down the creek during week days than on Sundays, and an inquiry as to the causes of this shows that it is not unusual for the canal management at Lockport to partially shut down the discharge of water from the canal on Sundays, as then it is not required for water-power purposes by the mills and factories.

The country along the creek between the city of Lockport and the town of Newfane appears to be of more than ordinary fertility. The land appears to be well cultivated, and except in spots, quite productive. The farm buildings are in good order, and most of the farms have fruit orchards. Rather more than one-half the land appears to be devoted to grazing and meadow purposes.

On the days of my inspection I found the water of the creek at all points between the mills and the Newfane town line to be very heavily charged with foreign matter and densely turbid, while above the mills and below the canal I found the water clear. The small amount of water in the creek above the canal was rather turbid from sewage pollution, but the amount of this water was small in comparison with the amount flowing in the creek below the canal and a much smaller part of that flowing past the mills which received water from another point on the canal. The water on the creek below the mills was loaded with suspended matter and highly colored; the suspended matter was composed of pulp, fibrous matter, shreds of rags and paper, and lower down the creek there was also seen considerable quantities of decomposing organic matter, in the flakes of which were found minute worms.

At the times of my inspection I did not observe any appreciable odor from the water, but its character was such as to have rendered it entirely unfit for any agricultural purpose, except possibly the sprinkling of gardens. The bed and banks of the stream were coated with deposits of the same kind of matter that was seen floating in the water, and in addition there was also seen at many points deposits of a slimy, leathery character resembling curd, which seemed to adhere to everything that was exposed to the water. I examined the wire screen referred to in the testimony of Mr. Edward Hatt which accompanies the complaint from the town board of health. The coating on the screen or sieve covered all the openings with a coating or film about as thick as a light-weight wrapping paper but coarser than any paper. I cut several squares of the coating from the

screen and have since examined them under the microscope; they are composed of fibres of wood, hemp, thread, jute, minute shreds of paper and cloth, a few fibres of wool and hair, the whole cemented together with a matrix which appears to be gelatinous and which contains some finely divided mineral and coloring matter, and which is quite insoluble in water. This coating was very similar to the matter observed on the twigs and grass that stood in the water, but was much more fibrous and much less gelatinous and leathery than the deposit on the stones in the bed of the creek. I send with this one of the little squares of material cut from the screen. I examined the soil and vegetation growing on land said to have been overflowed during the past winter or spring, but did not see any material that is not usually found in soils that are fertile; neither did I observe any appreciable difference in the vigor or rankness of the vegetation thus exposed as compared with that which had not been overflowed. The color of the water on two of the days observed was, at the upper portion and just below the lowest mills, light gray, while down near the Newfane town line it had gradually changed to a much darker gray. On the other day of my examination the water throughout was decidedly brown in color, but with the same character of floating material in it. I took samples of water from the creek at the bridge near the tollgate, which is just below the lowest mill on the creek, and also from the creek above the uppermost mill, and these are available for analysis if desired, though an optical examination is sufficient to indicate the very great difference in foreign matter carried by the water at the two places.

Having examined the creek at the points referred to in the complaint, I then examined the several mills from which refuse is alleged by the complaint to be discharged into the stream.

The information secured concerning the organization, product and operation of the several mills is as follows:

*The Traders' paper company*—This company was organized in 1895 and is incorporated under the laws of New York. The officials are as follows: President, James A. Roberts, of Buffalo,

N. Y.; secretary and treasurer, Timothy E. Elsworth, of Lockport, N. Y.; general manager, August H. Ivins, Lockport, N. Y.

The company operates the following mills, all situated on the creek and near together. These comprise the first mills on the stream below the canal:

The Lockport pulp mill, in operation since 1889.

The Franklin pulp mill, in operation since 1887.

The Niagara pulp mill, in operation since 1889.

The paper mill at the dam, in operation since 1896.

The paper mill at the dam, No. 2, in operation since 1900.

The sulphite pulp mill, in operation since June, 1901.

The company manufactures ground-wood pulp, sulphite-process pulp and heavy paper. The output of the several plants of the company is about 35 tons per 24 hours of ground-wood pulp, and 15 tons of sulphite pulp per 24 hours, though the capacity of the sulphite plant is about 25 tons. The above are on the basis of air-dried pulp. This pulp is all worked up in the paper mills of the company or sold as pulp board. The company uses for the production of the above pulp and paper some 30 cords of wood per 24 hours in the ground-wood pulp mill, 25 cords of wood per 24 hours in the sulphite mill and 3 tons of old paper. The company employs in all the above plants about 300 men.

The refuse turned into the creek from the plants of this company comprise: (1) The sulphite liquor from the sulphite process digesters and the wash water from the pulp tanks into which the pulp is run from the digesters. This liquor contains some unneutralized sulphite of lime, some free sulphurous acid and nearly all the non-fibrous portions of the wood used, they being dissolved by the sulphite of lime and discarded as useless in paper making. This soluble wood material amounts to about 40 per cent of the total weight of the dry wood, and for the plant in question probably amounts to 10 tons per day. Although this material is soluble in sulphite of lime, it is insoluble in water, and when discharged into the creek and the sulphite of lime becomes heavily diluted by the creek water, the material becomes insoluble and precipitates whenever and wherever the

current of the stream permits it. Being organic in character it is subject to decomposition. (2) The wash water from the beaters where the old paper used is macerated and washed. This material (the old paper) is not bleached at these mills, and hence no bleach liquor is discharged into the stream. (3) The general washings and drainage from the various parts of the several plants. (4) The sewage from the workmen employed at the works.

The wood-scrap from the ground-wood pulp plant, the lime refuse from the sulphite works and the ashes from the steam boilers do not appear to be discharged into the creek. Soon after the sulphite plant was put in operation during the past summer, the Niagara paper mill company on the stream below the sulphite plant complained of the pollution of the creek water by the sulphite plant, alleging that it interfered with the use of the creek water by the Niagara paper mill company. On account of this complaint the Traders' paper company carried their discharge pipe from the sulphite plant down stream below the point where the Niagara paper mill company took its water from the creek. The installation of this work required the pond to be drawn down, which was done on two Sundays in early August. It is quite probable that this was the cause of the trouble experienced on Sundays, as shown in the testimony taken by the board of health.

*The Lockport paper mill company*—Incorporated under the laws of New York in 1884. The officials of the company are: President, George Morse, Lockport, N. Y.; secretary and treasurer, Wallace J. Keep, Lockport, N. Y.; superintendent, John Jack, Lockport, N. Y.

The company manufactures building paper, roofing paper and heavy wrapping paper. It uses as stock about 20 tons of old rags per 24 hours, and 10 tons of old paper. Its output is about 28 tons per day, indicating a loss from waste of about two tons per day, most of which goes into the stream. The greater part of the stock is not bleached. The amount of chloride of lime used as a bleach is about 8000 pounds per annum. The coloring

material used is principally venetian red, of which some 60 tons per annum is employed. The company employs about 100 men.

The refuse discharged into the creek comprises: (1) The loss of manufacture, amounting to about two tons per day, a large part of which goes out through the beaters. (2) The general drainage from the rolls and other parts of the mills, carrying a large amount of coloring matter and some pulp waste. (3) The refuse bleach liquor, of which the amount as shown above is inconsiderable. (4) The sewage from the men employed at the mills.

*The Niagara paper mill*—Incorporated under the laws of New York in 1889. The officials of the company are as follows: President, F. N. Trevor, Lockport, N. Y.; secretary and treasurer. John A. Merrit, Lockport, N. Y.; manager, Willis H. Howes, Lockport, N. Y.

This company manufactures a line of colored specialties in mottled, marbled and highly tinted papers. Its output is from five to six tons per day. The stock used is old rags, rope, jute and some paper. Chloride of lime is used to bleach, analine dyes are used for coloring and alum is used as a mordant. Resin and alum are also used for sizing. The alum used amounts to 80 or 90 tons per annum. The manager reports that but five or six tons of chloride of lime are used per annum. The company employs about 30 men in their mill.

The refuse discharged into the stream from this mill includes: (1) Wash water from the beaters, carrying the refuse from the rags, paper, rope and jute. (2) The drainage from the rolls and from the mill floors, containing coloring matter and some pulp. (3) The refuse bleach-liquor, the amount of which is probably not very great. (4) The sewage from the mill employees.

*The United Indurated fibre company of New Jersey*—This company was incorporated under the laws of New Jersey in 1892. The official place of business is Lockport, N. Y. The officials of the company are: President, Jesse Peterson, Lockport, N. Y.; secretary, Henry G. Cordly, 17 Duane street, New York; treas-

urer, James E. Hayes, 17 Duane street, New York; manager, Jesse Peterson, Lockport, N. Y.

The company manufactures indurated fibre utensils and ware, pails, basins, covers, etc. The material used for stock is groundwood pulp, 45 per cent, and old paper and rags, 55 per cent. About cords of wood are used per day and tons of old rags and paper. The paper and rags are not bleached at all, but are worked through the beaters to macerate the stock. About one-sixth of the entire product is sized with resin, soda-ash, glue and alum. Fifty quarts of this sizing are used per day, and there is a loss in manufacture of about 15 per cent of this sizing.

The company employs some 250 men in its several shops, including its pulp mill. The refuse discharged into the stream from this establishment comprises: (1) The wash water from the beaters. (2) The waste and drainage from the pulp rolls where the sized pulp is handled, also from the other pulp rolls. (3) Some wood refuse from the wood grinders. (4) The general drainage from the several operations throughout the plant. (5) The sewage from the mill operatives. Item 2 being quite an appreciable one in this plant, I made an approximate determination of its amount by taking a sample from the discharge pipe which runs with fair regularity throughout the day. This pipe was discharging 35 cubic feet per minute at the time of my visit. The manager stated that the pump which furnished water for this purpose discharged about 300 gallons per minute, but that a portion of this ran over an overflow. This would indicate a pumpage of about 40 gallons per minute, which, after allowing for the overflow, would indicate that the measurement made by me was a fairly average one. The sample taken showed on subsequent examination to contain 256 grains per gallon, and, therefore, to indicate a discharge of 590 pounds of solid matter per hour into the stream from this one source.

*The Westerman & Co. rolling mill*—Mr. Calvin G. Sutliff, president and general manager of this company, stated that his plant discharged no refuse of any kind into the stream except the

sewage from the employees of the mill, who number about 100 men on an average. My examination indicated this to be correct.

*The Cowles aluminum works*—Mr. F. J. Davis, manager of these works, informed me that his company discharged no refuse whatever into the stream, and my examination indicated this to be correct.

These two last establishments, which are the last on the stream going downstream, are simply mentioned because they are placed on the alleged list of the establishments which pollute the stream, as furnished by the town board of health of Lockport.

The above completes the description of the sources of pollution charged in the complaint and covered by my instructions.

Having examined the conditions charged to exist in and along the stream, and also the sources of contamination alleged to be responsible for these conditions, I beg to submit the following conclusions:

1 That the stream referred to is foul in character, unfit for use for either potable purposes or for the watering of stock or other agricultural purposes, except for watering of gardens or crops.

2 That the banks and bed of the stream are badly coated with offensive organic matter, which, in my opinion, can hardly fail to give rise to offensive and harmful odors and emanations whenever the banks or bed are exposed during warm weather.

3 That, in my opinion, the various substances found to be discharged from the several mills above referred to are ample to fully account for the unsanitary and harmful conditions found in the stream, and the conditions described are such as should properly be expected from the materials thrown into the creek.

I am, dear sir,

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

ENGINEERING SCHOOL OF UNION COLLEGE

SCHENECTADY, N. Y., *September* 2, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—Agreeably to your intructions of August 23d, I visited the city of Lockport, N. Y., on August 26th for the purpose of inspecting the work now being done by the city authorities in the sanitary improvement of Eighteen Mile creek, especially to ascertain if the work was being carried out in accordance with the recommendations made by me, and made a part of the instructions sent by the State Board of Health on July 19, 1899; also to determine and report as to the proper and necessary point on the said creek to which the improvements now being made should be carried. I beg to submit the following report of my inspection, and my recommendations on the questions submitted:

On examining the work in execution and the contract and plans at the office of the city engineer, Mr. Julius F. Frehsee, I found that a contract is now in process of execution for a new bottom and covering to the creek where there is none now, and for rebuilding or relining present arches and culverts from the point of passing under the Erie canal to a point on the southerly line of the New York Central's property, where the old arching begins; also this contract covers the repointing and the smoothing up of the bottom of all the old arching from the last-named point above upstream as far as the end of the present arching at the south end of the lot owned by Mr. Owen Cain, on the south side of East avenue. The new portions of the work are being done by building on the rock bottom of the creek bed a rectangular conduit of concrete strengthened by imbedded steel bars, the dimensions being 8 feet wide and 7 feet high inside with walls 12 inches thick, the bottom being a concrete invert laid on the rock bed and slightly curved. The location of a portion of the old culvert near the canal is being changed and the rectangular form substituted for the arched under some of the mills.

This portion of the work is being well done apparently, and if the plans are carried out should give a very smooth interior and one that should not detain or hold sewage materially. Some rough work on the interior was noted, but I understand this is to be rectified. I did not make any investigation as to the carrying capacity of this conduit as compared with the demands likely to be thrown on it by freshets in the creek. It seems to be less definitely understood as to what character of work is to be done in relining the present arching.

The specifications appear a little indefinite, and much appears to be left to the discretion and interpretation of the city engineer. The importance of securing an inside lining, durable in character and smooth in surface, can hardly be overestimated, as the immunity from objectionable odors and bad-smelling sewer air will depend on there being the least possible detention of the sewage as it flows through the arch.

The projecting points of the stonework of which the arching is made will render very full and flush pointing necessary to meet the above sanitary requirement in any degree, and this should receive especial attention, as well as the rectification of the bottom or invert of the old arching.

Concerning the proper distance to extend the improvement of the creek, I may say that while on my former inspection in June, 1899, I examined the creek for its entire length from the Erie canal to the city limits, and made my recommendations in accordance with the necessities of the entire length; still I did not specify definitely just how far upstream the improvement should extend. It was not my intention, however, that the work should stop with the closing of the gap between the Franklin mills and the New York Central south line, being the beginning of the old arching, since some of the worst conditions to be remedied were found above the end of the old arching near East avenue. The portion of the creek from East avenue to the city line may be divided into three sections: First, a section of about 500 feet from the end of the arching at the south end of the Cain lot on the south side of East avenue to Walnut street.

Second, a section of about 400 feet from Walnut street to Pound street. Third, a section extending from Pound street to the city limits, a distance of some 2000 feet or more. Section first receives a large amount of sewage and refuse matter, receiving the washings and refuse from a thickly settled portion of the city—the sewage from the Walnut street sewer, which sewers a large district and the street inlets from Walnut street, beside the matter brought down from above Walnut street. The Walnut street sewer is claimed by some of the inhabitants to have an inverted siphon passing under the creek with an overflow which only should discharge into the creek at Walnut street, and it is claimed that no sewage will ordinarily enter the creek if this inverted siphon is once put in order by removing its apparent obstructions. To this I may say: The sewer is a large one, 15 inches in diameter, and, beside the sewage from a large district, carries a good deal of street drainage, containing of course much mineral detrius; the depression downward of the inverted siphon cannot be less than three and one-half feet to pass under the creek bottom; the sewer grade along this street is flat, being only .57 feet per 100 feet, giving a velocity to the sewage too slow to insure keeping such an inverted siphon clean or free from mineral detrius, so that should it be found that such an inverted siphon exists, of which there is no record, and the sewer map shows nothing of the kind, and if it should be cleaned out at heavy expense, there is very slight probability that under the conditions existing there it could be maintained in running order. Ordinary flushing by hose or other available means would have little or no effect to remove mineral matter from the lowest part of the depression. Such inverted siphons are not very uncommon, but when employed they are either used on grades, giving much higher velocities, or are provided with accessible silt chambers for regular cleaning out. I know of no inverted siphon working satisfactorily under as severe conditions as are here present. The overflow sewer was discharging into the creek at the time of my inspection two years ago, and neighboring residents state that it has been running for at

least four years. For the above reasons it would appear not worth while to remove the obstructions but to abandon the inverted siphon, use the overflow as the regular sewer outlet and cover the creek for this and the other reasons stated. Section second carries less sewage proper, but the conditions of its banks and the adjoining territory are similar to that of the first section though less densely built up. There is a large area of polluting territory above Pound street and the stream is a small one. The bed of the creek at the time of both visits was reeking with organic matter of various origins the decomposition of which does not contribute to sanitary conditions for the adjoining residences. One of the formal complaints submitted to you from persons residing near the end of the East avenue arching was based almost wholly on the nuisance produced by the escape of sewer air from the end of the arching at the rear end of the Cain lot. Personal interviews with other residents living near this place indicated the complaint to be a common one, and wholly in keeping with my expectation founded on my former inspection. This arises, as I explained in my former report, from the fact that for a considerable portion of the length of the arching north of East avenue the grade is a very steep one, making the arching a sort of chimney through which the sewer air will always ascend whenever the temperature of the outside air is the cooler, which is the case in winter and also on cool nights of summer. To extend the arching to Walnut street will simply change the point of delivery from East avenue to Walnut street, and as the prevailing winds here are from the west, I was told, the sewer air will be driven along the line of residences on Walnut street east of the creek, a thickly built up portion of the city. At the intersection of Pound street, on the contrary, there are fewer houses, and since this street runs about north and south, the prevailing wind will carry the sewer air away from the residences on the street and into a district not yet built up. For these reasons it would appear desirable to have the second section also arched over.

The third section lies almost wholly in a country district, or at least so far from residences as not to warrant, in my opinion, the present extension of the improvement to the section.

I beg therefore to recommend as the basis of instructions to the local authorities the following:

1 The extension of the creek improvement on substantially the same line as that employed below Union street to the first and second sections above named, viz, from the Cain lot reaching to the Pound street culvert, including the relining of the two street culverts passed on the way.

2 In case the sewer air escaping from the arch after the new and the old portions are completed should cause trouble, I would suggest the adoption of a swinging ventilating door at one or two points on the square portion of the new covering so arranged and hung as to permit the free passing of even a full section of water, and to prevent the passage of air upstream. This should by no means be used as the main preventive, but only to assist after the air has been improved as much as is possible with the rough character of the interior surface which the old portion of the arching will probably have, even after relining. I explained the general manner of arranging this door to the chairman of the sewer committee.

Acting on their best judgment as to the interpretation of the instruction from the State Board of Health of July, 1899, and as to the sanitary needs of the district, the sewer committee originally prepared an ordinance providing for the improvement of the creek as far as Pound street, but at a hearing there was such a strong opposition to the carrying of the improvement beyond East avenue offered by taxpayers who lived too far from the creek to appreciate the benefits to be derived that the council terminated the improvement at East avenue instead of extending it to Pound street.

I am, dear sir,

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

ALBANY, N. Y., *October* 21, 1901

Hon. LOUIS E. HUSTON, *Mayor of the City of Lockport, N. Y.:*

Dear Sir—I enclose herewith copy of a report made to me by Prof. Olin H. Landreth upon his investigation of work being done on Eighteen Mile creek, and would call your attention to the recommendations made by Prof. Landreth, which have received my approval.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

## GREENWOOD LAKE

ALBANY, N. Y., *January* 8, 1901

Hon. BENJAMIN B. ODELL, JR., *Governor of the State of New York, Albany, N. Y.:*

Dear Sir—I have the honor to inform you that under date of November 20, 1900, this Board received instructions from the governor to investigate a complaint made by the Greenwood lake association concerning alleged unsanitary conditions at Greenwood lake, caused by the drawing down of the water of the lake by a corporation located in the state of New Jersey.

Upon an investigation made by one of the consulting engineers of this board it is found that conditions exist at Greenwood lake which are of menace and danger to the life and health of citizens of this state, and that the nuisance is maintained by persons and corporations in the state of New Jersey, the following facts bearing on the case being stated by the complainants:

"The Morris canal and banking company of the state of New Jersey acquired the right to use the waters of Greenwood lake, lying in the state of New York, by a grant from the canal board of the state of New York, issued in 1835 and 1839; this grant specifically limited the use of these waters to a canal for canal purposes.

"These waters of the state of New York are now drawn off and used by the lessees of the Morris canal and banking company under an agreement with the East Jersey water company of New Jersey and the Society of useful arts and manufactures of Paterson, N. J., to supply in part drinking water to the cities of Montclair, Jersey City and other towns and cities in the state of New Jersey."

In compliance with a resolution adopted at a meeting of this Board, I have the honor to recommend that you call the attention of the governor of the state of New Jersey to the unsanitary conditions existing at Greenwood lake in this state caused as stated in the complaint, by residents of the state of New Jersey.

Very respectfully

BAXTER T. SMELZER

*Secretary*

STATE OF NEW YORK—EXECUTIVE CHAMBER

ALBANY, *March* 25, 1901

*Commissioner of Public Health, Capitol, Albany:*

Dear Sir—I am directed by Governor Odell to hand you the enclosed opinion by the attorney-general in the matter of the complaint of the Greenwood lake association against the Morris canal and banking company of New Jersey.

Yours very truly

JAS. G. GRAHAM

*Secretary to the governor*

STATE OF NEW YORK

ATTORNEY-GENERAL'S OFFICE

ALBANY, *March* 21, 1901

*To the Honorable the Governor:*

Sir—Kindly pardon my delay in replying to your communication concerning the complaint made by the Greenwood lake association and asking my opinion as to the rights of the Morris canal and banking company of New Jersey to use the waters of Greenwood lake. This delay was caused by the illness of my deputy, Mr. Coman, who had the matter in charge.

It was only recently that the report of Professor Olin H. Landreth, consulting engineer for the State Board of Health, was submitted to me. Professor Landreth reports that in November last he went to Greenwood lake and ascertained that last fall the canal company lowered the water in the lake seven or eight feet below the artificial level of the lake as raised by a dam 10 feet high, which was built by the canal company for the purpose of storing water for the Pompton level of the canal; that this reduction of the lake level has left exposed a large tract of land surrounding the village of Greenwood lake in this state, and that there then existed decided malarial conditions, and many cases of malaria or chills and fever were reported to him which were unusual in that locality.

At the close of the professor's report which is quite voluminous, he says as follows:

"A few of the outline facts have been stated in the above report, but the great mass of facts bearing on the matter still needs further investigation to properly connect and establish them, and I should have done this before submitting this report but for the fact that you desired me to submit the report to-day. I have therefore in conclusion to summarize as follows:

"1 My examinations of the lake, and especially at Greenwood Lake village, lead me to believe that the health of the citizens of the village is being impaired by the undue drawing down of the level of Greenwood lake.

"2 Further time is needed to investigate the facts bearing on the use of the waters withdrawn from the lake and the right to such use.

"3 These facts, when collected, will then need to be submitted to some legal authority for an opinion as to the remedy open to the local or State Board in the matter.

"If you conclude to have the investigation into the facts continued, you can so inform me; otherwise I shall do nothing further."

I find that Dr. Smelzer, secretary of the State Board of Health, replied to Professor Landreth on November 28, 1900, acknowl-

edging receipt of his report upon investigation, and stati
"That a further consideration of the subject, as suggested
you, will not be taken up for the present."

By independent investigation I find that the facts as sta
in the complaint are erroneous. There was no grant to
Morris canal and banking company, or to any other person
corporation, by the canal board. The state never owned
land surrounding the lake; it was owned by private citize
I do find, however, that by chapter 296 of the laws of 1855,
Morris canal and banking company, a corporation created
the laws of the state of New Jersey, was authorized to apply
the supreme court of this state for the appointment of comm
sioners to estimate both the damages sustained by the own
of real estate within this state prior to the passage of that a
by the overflowing of the land, and the value of the lands flow
and proposed to be taken by the canal company for that p
pose; and upon filing maps in the Orange county clerk's off
of the real estate sought to be appraised, and upon payment
the amount awarded by the commissioners, the canal compa
was authorized to acquire title to lands within this state.

In the year 1856 a bill was introduced in the legislature
the repeal of the act of 1855, and the report of the judicia
committee of the senate, to which was referred said bill,
contained in senate document No. 95 of 1856. The commit
reported that they had been attended by the president and ot
officers of the Morris canal and banking company and by
Peter Townsend, the owner of the property in the county
Orange authorized to be taken by that company for the uses
their canal in the state of New Jersey, and that upon the d
cussion which ensued the following facts have been elicited:

"That the Morris canal and banking company was incorp
ated by the state of New Jersey in the year 1831 for the purpo
of constructing a canal, which lies wholly within the state
New Jersey, and by an act passed by the legislature of th
state in the year 1836 was authorized to construct a dam acro
the outlet, in the state of New Jersey, of the lake known

reenwood lake in the county of Orange in this state (but extending somewhat beyond the state line into the state of New Jersey) for the purpose of providing a reservoir in New Jersey for the use of the canal; that the canal company accordingly, after the passage of that act, erected the dam in the state of New Jersey, the natural and obvious effect of which was to overflow the lands lying around the margin of the lake in the state of New York; that Mr. Peter Townsend is the owner of the lands bordering the lake in this state affected by the dam, and portions of which have been owned by himself and members of his family during a very long period of years, he having always resided in that county and neighborhood, and that the effect of the flowing of the land has been seriously detrimental and injurious both to the value of the land and to the health of the neighborhood; that prior to the passage of the act of 1855, now proposed to be repealed, Mr. Townsend had commenced an action in the supreme court of this state against the canal company and recovered a judgment in an action on the case for damages, on account of the flowing of his land. This action was commenced and judgment recovered for the purpose of establishing his title and his right to redress, with a view to ulterior proceedings to compel an abatement of the nuisance. Having recovered this judgment, he next commenced an action in the Federal court in the state of New Jersey to compel the abatement of the alleged nuisance, which action is still pending. Under these circumstances the act of 1855 was passed. Your committee are unanimously of the opinion that that act was beyond the constitutional power of the legislature to enact; that it was not a legitimate exercise of the power of the state to authorize the taking of private property for public use; that it was unadvisedly passed and it ought to be repealed. They have arrived at these conclusions upon a careful consideration of the opinions of very able and eminent counsel upon the questions which have been submitted to them."

Appended to this report are the opinions of Charles O'Conor, esq., and T. McKissock, esq., both of whom expressed the opinion that the act of 1855 was unconstitutional and void.

The law of 1855 was not repealed.

In 1871 the Lehigh Valley railroad company, under an act of the legislature of the state of New Jersey (see laws of New Jersey, 1871, p. 444), acquired title to all of the property, rights and franchises of the Morris canal and banking company, by a perpetual lease, and the railroad company is now engaged, as I understand it, in supplying water from Greenwood lake to several cities and villages in New Jersey.

It is my opinion that section 6 of the Public health law (chapter 661, laws of 1893), which authorizes the State Board of Health to make examinations into nuisances and report the result to the governor, and authorizes the governor to declare the matters public nuisances, upon approval of such report, and further authorizes him by a precept to require the district attorney, sheriff or other county officers where such nuisance is maintained to take necessary measures to abate such nuisances, does not authorize the governor, or any county official, to abate any nuisance which may exist in a sister state.

The only remedy to abate a public nuisance of this character would seem to be by an action in equity in a Federal court within the state of New Jersey, at the suit of the people of this state, through the attorney-general.

Before bringing any such action it would be necessary for me to examine carefully into all the facts concerning the alleged nuisance, for the question whether a nuisance does in fact exist is one for the trial court to determine, and a proper case should be made out before prosecuting. It is doubtful whether in such an action any determination of the State Board of Health would be conclusive as to the existence of a nuisance. Again, I should investigate the legal steps taken under the statute of 1855 by the canal company, the company's charter, the records and proceedings in various clerks' offices of the courts of this state and New Jersey, in the suits brought many years ago by Mr. Townsend to have the alleged nuisance abated (referred to in the senate committee's report in 1856) and many other facts bearing upon this question.

At the present time I am unable to take up this work, owing to the great pressure of public business on hand, but at my earliest opportunity, if you so desire, I will take pains to gather these important facts, and will then be in a position to advise you fully of the legal rights of the people in the premises.

It is possible that a similar nuisance is caused within the state of New Jersey, for Greenwood lake has a considerable shore line within that state. If so, the New Jersey state board of health have power under the New Jersey act of May 24, 1894, to abate such nuisance as far as their state, wherein is contained the dam, is concerned.

All of which is respectfully submitted.

JOHN C. DAVIES
*Attorney-general*

ALBANY, N. Y., *March* 27, 1901

HENRY MITCHELL, M. D., *Secretary State Board of Health, Trenton, N. J.:*

Dear Sir—Agreeably to instructions received in November last from the governor of this state, the State Board of Health investigated a complaint made by the Greenwood lake association concerning an alleged nuisance caused by the continued drawing down of the waters of Greenwood lake by the Morris canal and banking company of New Jersey.

Enclosed you will find a copy of the report made by Prof. Olin H. Landreth, consulting engineer; also copy of a letter received from Dr. J. S. Cummins, health officer of the town of Warwick.

At a meeting of the State Board of Health, held December 20, 1900, the report of Professor Landreth was accepted and the following resolution adopted:

"Whereas, This Board, pursuant to the request of the governor, has investigated the conditions existing at Greenwood lake and found that a nuisance exists there, injurious to the life and health of citizens within the state of New York, said nuisance being maintained by persons and corporations within the state of New Jersey.

"Resolved, That this Board recommends that the attention of the authorities of the state of New Jersey be called to the fact that a nuisance does exist at Greenwood lake in this state, and that it is caused by persons and corporations within the jurisdiction of the state of New Jersey."

It is respectfully requested that your board take such action as may be necessary looking to the abatement of the nuisance at Greenwood lake caused, as alleged, by lowering the lake level as stated in Professor Landreth's report.

We would be pleased to be informed of any action your board may take in this matter, and any further information in the possession of this Department will be furnished if requested.

Very respectfully

DANIEL LEWIS

*Commissioner of health*

TRENTON, N. J., *June* 28, 1901.

*To the Board of Health of the State of New Jersey:*

Gentlemen—An inspection of Greenwood lake was made June 12, 1901, for the purpose of observing the conditions affecting the health of persons dwelling along the borders of said lake.

Complaints, transmitted through the Department of Health of the State of New York, show that during the summer of 1900 the level of the water in the lake was lowered about six feet, and that large areas of the bottom of the lake were left uncovered.

Upon inquiry it was learned that the uncovered flats proved very detrimental to the business of the hotels and boarding houses which are located on the shores of the lake, and many persons suffered serious financial injury because of the unattractive appearance of the lake due to the low water level. It was learned that the water was lowered in the lake to permit repairs to be made to the dam at the outlet; that no such uncovering of the lake bottom had previously occurred for several years, and that the necessity for such repairs and the consequent drawing off of the water of the lake is not liable to soon occur again. The water of the lake is used for increasing the supply of the city of Paterson

when the Passaic river is low, and waste fluids from dwellings are not allowed to flow directly into the lake. The lake was found to contain a very abundant growth of algae, and the odor emitted by the decaying plants was offensive. This condition had existed but a few days, but doubtless it will continue for several weeks if the usual growth, decay and revival of this plant in impounded waters occurs in this instance. No unhealthful influence can be charged to the presence of algae in waters, but the suffocative, musty odors caused by the dying plants are almost as objectionable from the hotel keepers' point of view as the low water of last summer was found to be.

Inquiry on the spot and an examination of the records of this office show that malarial fevers were not more common among the residents along the lake shore last season than usual, and there is no evidence to show that this locality is unhealthful or that any disease has been especially prevalent there. From numerous sources it was learned that mosquitoes were less numerous last season in the vicinity than usual, notwithstanding the low water.

In view of the foregoing facts it appears that the questions pertaining to the low level of the lake water during the summer of 1900 are mainly commercial in their relations, and that the public health of the locality was not unfavorably affected.

Very respectfully

HENRY MITCHELL

*Secretary*

ALBANY, N. Y., *July* 9, 1901

HENRY MITCHELL, M. D., *Secretary State Board of Health, Trenton, N. J.:*

Dear Sir—I am in receipt of your communication of the 2d instant, inclosing copy of report of an inspection of Greenwood lake by the authorities of the state of New Jersey.

The report states as follows:

"Inquiry on the spot and an examination of the records of this office show that *malarial fevers* were not more common among

the residents along the lake shore last season than usual, a there is no evidence to show that this locality is unhealthful that any disease has been especially prevalent there."

Notwithstanding the above statement it is affirmed under oa by many old residents of Greenwood lake, as well as by our cc sulting engineer in his report, a copy of which was furnished you, that numerous cases of chills and fever were prevalent at tl lake during the season of 1900, which were attributed to tl drawing down of the waters of the lake.

As you state that the water was lowered last year to perm repairs to be made to the dam, and that the necessity for su repairs and the consequent drawing off of the water of the la is not liable to soon occur again, this Department has so inform the complainants.

Should further complaints be received this season your atte tion will be called to the matter with the expectation that yo board will give the subject prompt attention.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

By T. A. STUART

*Chief clerk*

## TOWN OF DEERPARK

### Abandoned Delaware and Hudson canal

PORT JERVIS, N. Y., *August* 28, 1901

*State Department of Health, Albany, N. Y.:*

Gentlemen—The town board of health of the town of De park have received the following complaint from the residen of Cuddebackville and vicinity:

"We, the undersigned residents of Cuddebackville, N. Y., a vicinity, do hereby protest against the condition in which t Delaware and Hudson canal has been during the past thr

days. This state of affairs has been brought about by one Dr. McBriar, reputed owner of Neversink feeder, who has shut off all the water, causing stagnation and consequent ill health. While we are aware that the canal is to be abandoned, we however request of your honorable board that you insist that the owners keep said canal in a healthful condition by permantly retaining the water in this vicinity or draining it thoroughly and effectively. Its present condition is a menace to health, and we therefore ask for prompt action in this matter."

This communication was received and filed on the 20th day of August, 1901, and a committee was appointed to confer with Dr. McBriar and the Erie railroad company, reputed owners of the feeder and canal respectively, to see what arrangement could be made toward abatement of said nuisance. At a continued meeting held on August 27, 1901, the committee reported that said owners came to no agreement regarding the abatement of said nuisance. A motion was made by the board of health as follows: "That on investigation this board finds that the bed of the canal referred to in the above complaint is in an unsanitary condition and has become a public nuisance, detrimental to the public health, and this board take immediate action toward placing same in a sanitary condition." The following motion was also passed: "That Health Physician Knapp be instructed to at once communicate with the State Board of Health requesting them to send a representative as per a communication received by him under the date of August 20, 1901." Under date of August 28, 1901, the following motion was carried: "That the clerk be instructed to forward a formal complaint to the State Department of Health requesting them to take the matter in charge immediately."

Very truly yours

EDWIN R. QUICK

*Town clerk*

STATE OF NEW YORK—EXECUTIVE CHAMBER

NEWBURGH, N. Y., *September* 20, 1901

DANIEL LEWIS, *Health Commissioner, Albany, N. Y.:*

Dear Sir—I enclose your letter from the chairman of the board of health of the town of Deerpark. I think this matter should be looked into at once, and such action as may be necessary on my part I will take when advised.

Very truly yours
B. B. ODELL, JR.

PORT JERVIS, N. Y., *September* 12, 1901

Hon. BENJAMIN B. ODELL, JR., *Governor of the State of New York, Albany, N. Y.:*

Dear Sir—By direction of the board of health of the town of Deerpark, I respectfully submit to you a statement of facts concerning the condition of the abandoned Delaware and Hudson canal, 18 miles of which passes through our town. The canal passes through a picturesque and inviting country, and along it are many hotels and summer boarding houses for summer residents.

Some time in August the water was shut off from that portion of the canal between Cuddebackville and Wurtsboro, known as the Seventeen Mile level, by reason of one Dr. McBrair, who purchased of the canal company the feeder which carried the water from the Neversink river into the canal, diverting this water to the Neversink river because of differences he has with the present canal owners. This left the bed of the canal in such an unsanitary condition as to cause the people in that part of the town of Deerpark to complain to the State Department of Health and also to the town authorities, the former of whom communicated with the town health officer of the town of Deerpark and offered to send a representative of the State Board to advise with the local authorities.

By direction of the town board the health officer conferred with the State Department by telephone, requesting them to

send a representative, but he was referred to section 6 of the Public health law and directed to forward the complaint with a statement of the facts to the governor, who would then refer the same to the State Department of Health.

A further complaint was received this week from the Cuddebackville people, desiring that immediate steps be taken to abate the nuisance, and the Deerpark town authorities respectfully ask that you will see that the State Department take prompt action in this matter.

This nuisance is not confined to the town of Deerpark alone, but affects adjoining towns through which the canal passes, and it is consequently a matter which requires state action.

Yours truly

WM. H. NEARPASS

*Supervisor and ex-officio chairman board of health*

ALBANY, N. Y., *October* 18, 1901

Hon. B. B. ODELL, JR., *Governor of the State of New York, Albany, N. Y.:*

Dear Sir—In compliance with instructions contained in your communication of September 20, 1901, Prof. Olin H. Landreth, one of the consulting engineers of this Department, investigated the complaint made by the board of health of the town of Deerpark concerning a nuisance caused by the defective drainage of the abandoned Delaware & Hudson canal in the town of Deerpark, Orange county.

I submit herewith a copy of the report made by Professor Landreth. While it is shown that the existing nuisance is one that should be abated, you will observe from the statement made by Professor Landreth that the maintenance of the nuisance is also in direct violation of the provisions of section 4 of chapter 469 of the laws of 1899.

In view of the statements made in the report as to the ownership of that portion of the canal situated in the town of Deerpark. I would suggest that the attorney-general be called upon to ascertain as to ownership, and when such fact is determined,

to take the proceedings necessary to require compliance with that portion of section 4 of chapter 469 of the laws of 1899 which provides that "It shall also be the duty of said company, its successors and assigns, to take such precautions and make such provisions for the carrying away of water that may flow into the bed of such portions of said canal as may be discontinued as will prevent such stagnant pools of water therein as are liable to become injurious to the public health."

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

ENGINEERING SCHOOL OF UNION COLLEGE

SCHENECTADY, N. Y., *October* 10, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—In the matter of the complaints concerning a nuisance produced by the defective drainage of the abandoned Delaware & Hudson canal in the town of Deerpark, Orange county, referred to me for investigation on September 24th, I beg to report that I visited the locality on September 27th, but have had to delay this report pending the receipt of a search of the county clerk's office for deeds showing the present ownership of the land forming the bed of the canal where the drainage defects exist.

I beg to append hereto a sketch map of the vicinity of the defects showing the streams, railroads, canal and feeder involved in the complaint. The Eighteen Mile level of the Delaware & Hudson canal was the summit level between Port Jervis and Kingston, and was fed, when the canal was used, by the Neversink feeder shown on the sketch. Since the abandonment of the canal for traffic in 1899 the feeder in question has still delivered some water into the canal, which has thus generally been kept full or partly full. This feeder has recently come into the possession of the Neversink light and power company of which Dr. McBrair,

of Middletown, N. Y., mentioned in the complaint, is reported to be one of the principal stockholders and officials. Early in August of the present summer it is reported that the water was shut off from the feeder, and as a consequence the feeder and the Eighteen Mile level of the canal became dry except in low portions where the water was unable to drain away. Such low places occur at a number of points between the most northerly of the chain of five locks near the Neversink river aqueduct and the northerly line of the Deerpark township, and one of the worst of these places occurs in the little village or hamlet of Cuddebackville situated on the canal just north of the feeder. Complaints having been made by adjoining residents to the town board of health of Deerpark as to the unsanitary conditions brought about by the shutting off of the water from the feeder by the reputed owners, the water was turned in again for a few days but was again shut off as soon as cooler weather set in, and at the time of my inspection no water was entering the canal from the feeder, and the canal was empty except at the low places mentioned above. Cool weather having prevailed for some time before my inspection, the conditions found to exist when I visited the place were not bad and were not creating any nuisance, though the water in some of the low places was stagnating.

The conditions which I saw were, however, just such as invariably give rise to unsanitary emanations and bad odors during warm weather, and they should be promptly and effectively abated by the responsible parties. I have no reason to doubt that the conditions at the time the complaints were made were fully warranted by the circumstances and I should expect just such conditions. I examined the canal along the entire distance from Port Jervis to the northerly line of the town of Deerpark, and while the complaints are confined to the southerly end of the Eighteen Mile level, I learned from unquestionable authorities that the water has occasionally been drawn partly out of the Twelve Mile level—the level extending through Port Jervis and to Cuddebackville—and that the same unsanitary conditions

had followed such drawing off of the water. There are a nun ber of "basins" or low places in both the levels of the cana which retain stagnant water when the water is drawn off fron the canal prism proper, and each of these becomes an unsani tary point whenever good circulation in the canal is suspendec by lowering the water so as to shut these basins off from gen eral circulation or flow along the canal channel. The conditions in the low places or "basins" are rendered the worse by the fact that each of these so-called "basins" is produced by the canal crossing the original line of a stream which in each case has been taken into the canal. Being deeper than the ordinary canal bottom, and being the receptacle for much organic matter which is brought into the canal by the stream, the water of these basins is generally badly polluted and has much deposited organic matter in the beds of the basins.

Concerning the question as to who is responsible for the present conditions, I beg to say that the abandonment of the canal for purposes of traffic was authorized by an act of the legislature, being chapter 469 of the laws of 1899. The canal was then owned by the Delaware and Hudson canal company. The law referred to contains the following clause besides others providing for the lowering of highway bridges and the provision for the drainage of streams originally diverted from their course by the building of the canal.

Last clause of section 4, chapter 469, laws of 1899:

"It shall also be the duty of the said company, its successors and assigns, to take such precautions and make such provisions for the carrying away of water that may flow into the bed o such portions of said canal as may be discontinued, as will prevent such stagnant pools of water therein as are liable to become injurious to the public health."

The same law authorizes the change of name of the company to the "Delaware and Hudson company" by which name its deeds of sale of the canal properties have since that time been signed.

I find from the search which the local board of health of the town of Deerpark has made for me that the Delaware & Hudson company on June 24, 1899, by a deed recorded on page 63, of book No. 453, county clerk's office of Orange county, conveyed the canal bed and appurtenances between Eddyville, N. Y., and Honesdale, Pa., to the Cornell steamboat company of Kingston, N. Y., but I have been unable to find records of any subsequent deeds of the property, though it is generally understood that the Cornell steamboat company has disposed of the property. The deed to the steamboat company specifically provides that the said steamboat company "hereby covenants and agrees that it will in all respects undertake and perform the obligations imposed upon the Delaware company by said chapter 469 of the laws of 1899 and especially those specified in section 4 thereof to which reference is hereby made for greater particularity and will in all respects indemnify and save harmless the said Delaware company of and from any damages, claims or demands arising under the provisions of said act."

It is generally understood at Port Jervis that the canal property through the town of Deerpark is now owned or leased by the Erie railroad company, but I was not able during the time I was there to secure positive evidence of this fact. I may mention, however, that some months ago numerous wooden signboards were placed along the towpath of the canal containing the following notice:

"Notice—This tow-path is not a thoroughfare. Parties trespassing thereon do so at their own risk.—Erie R. R. Co."

At the time of my inspection the words, "Erie R. R. Co." had been scraped off the board and the scraped part painted over, and I was informed that a man had been seen just before the date of my inspection going along the towpath with a paint pail and brush, painting over the names as described. I beg to submit one of these boards with this report. I also beg to submit a copy of the search of titles made by the county clerk of Orange county showing the transfers of Delaware & Hudson

canal property during the periods since January 1, 1899, indicated on the appended letter of the county clerk. I also beg to return with this report the original complaint made to you by the clerk of the town board of health of Deerpark dated August 28th.

In conclusion I beg to say that in my opinion the interests of the public health of the locality adjacent to the canal require that the canal be thoroughly and completely drained of water and kept in this condition, or else that it be kept full of water, preferably the former. The local board of health has taken no official action to secure either of these conditions except to request one of the owners of the Neversink feeder to allow the water to flow through the same into the canal.

I am, dear sir,

Very truly yours

OLIN H. LANDRETH

*Consulting Engineer*

STATE OF NEW YORK
ORANGE COUNTY CLERK'S OFFICE } *ss.:*

I, William G. Taggart, clerk of said county, do hereby certify that I have searched the indexes of deeds in my office for deeds executed by the following corporations and persons during the periods hereinafter named:

The Delaware and Hudson canal company, from January 1, 1898, to October 1, 1901.

The Erie railroad company, from November 23, 1899, to October 1, 1901.

Raymond W. Carr, from April 18, 1900, to October 1, 1901.

The Cornell steamboat company, from June 23, 1899, to October 1, 1901.

And find as follows, viz: Affecting lands in the town of Deerpark, Orange county, N. Y.

Dated October 1, 1901.

The Delaware and Hudson company (formerly the president, managers and company of the Delaware and Hudson canal company) to Otto T. Bannard. Deed dated June 28, 1899, book No.

3, page 13. July 3, 1899. Lands in the town of Deerpark be-
ıning at a pile of stones on the northwest side of the Dela-
re and Hudson canal below the foot of the lock No. 53, and
ıs thence north 51 degrees west 4 chains and 28 links to a
.ke in the ground; thence north 39 degrees east 5 chains and
links to a chestnut sapling; thence south, etc., containing 2
·es of land, more or less, excepting and reserving therefrom
first party, its successors and assigns, a strip of land of a
iform width of 15 feet lying westerly of and adjoining the
·me bank of the canal, and excepting and reserving therefrom
:o so much of said land, if any, as is used and occupied as a
blic highway.

The other of them, beginning at a point in the center of the tow-
th of the Delaware & Hudson canal on a line of lands owned by
A. Van Inwegen and lands formerly owned by Samuel Cordon,
out half way between locks No. 54 and 55; thence along said
wpath north 42 degrees east 2 chains to a point; thence north,
:., said to contain about 134 acres, more or less, excepting
d reserving from the second parcel above described to said
ıt party, its successors and assigns, so much of said lands
lie westerly of a line parallel with and 15 feet distant east
y from the towpath side of its canal, and excepting and re-
·ving also all that certain parcel of land containing about one
lf an acre conveyed to James and Jane Mitchell and also
:epting and reserving so much of said land as is used and
:upied for public highways.

And this deed is made subject to such rights, if any, as have
en acquired by the Port Jervis, M. & N. Y. R. R. company
· right of way for its railroad tracks across the second parcel
ove described.

The Delaware and Hudson company to James Mitchell and
ne Mitchell, his wife. Deed dated June 22, 1899, book No.
3, page 92. July 12, 1899. Lands in the town of Deerpark,
ing near lock No. 54 of the Delaware & Hudson canal com-
ıny, beginning in the middle of a stone fence on the southeast
de of the road and running from thence north 64 degrees east

along the southeast side of the road 4 chains and 52 links to a point in a stone fence near its end; thence south, etc., containing half an acre of land, subject to conditions and reservations in deed Moses Van Inwegen to first party.

Same to James C. Mitchell. Deed dated June 22, 1899, book No. 443, page 94. July 12, 1899. Lands in the town of Deerpark, beginning in the line of lands of Gumaer brothers at the corner of a lot formerly owned and occupied by Albert D. Southard on the east side of the public highway; thence south 46½ degrees east along said Gumaer's land 6 chains and 50 links to a stone wall; thence north, etc., containing 1 acre of land.

Same to J. Vanton Brown. Deed dated July 27, 1899, book No. 443, page 450. September 7, 1899. Lands in the town of Deerpark immediately adjoining the canal of the said party of the first part, beginning in the Old Kingston road, so called, at a point 29 links north 41¼ degrees west from a stake with stones about it standing by the fence on the southeasterly side of said road and running from thence along said road north 47½ degrees east 6 chains to a stake and stones on the west side of said road; thence south, etc., containing 3 acres and 16-100 of an acre of land, more or less, together with the same rights of access to and the use of the waters of a spring on land now or formerly of E. P. Gumaer and others, etc., excepting and reserving out of the above described parcel so much thereof as is used and occupied for a public highway and also so much thereof as lies southeasterly of a line parallel with and distant 15 feet northwesterly at right angles from the berme bank of the canal and subject to the same exceptions and reservations as are contained in the deed above recited. (E. P. Gumaer to first party, dated September 8, 1865.)

Same to Gustav Julius Dopslaff and Augusta Dopslaff, his wife. Deed dated September 14, 1899, book No. 444, page 200. October 13, 1899. Lands in the town of Deerpark, beginning at the east corner of a piece of land belonging to first party formerly occupied as a garden by Wm. C. Rose, and runs thence south 61¾ degrees west along the fence or line of said lot 1

chain and 95 links to the south corner thereof; thence south, etc., excepting and reserving therefrom so much of said land as lies northeasterly of the southwesterly side of the public road crossing the same. The parcel of land hereby conveyed contains 1½ acres, more or less.

Same to the Erie railroad company. Deed dated November 24, 1899, book No. 445, page 88. December 11, 1899. Lands in the town of Deerpark, beginning on the towing path side of the Delaware & Hudson canal on what was formerly known as the "Camp ground" at a point 6 links distant on a course of north 60 degrees west from a large buttonwood tree as the same stood on April 7, 1854; thence south 11¼ degrees east 10 chains and 21 links to line of land formerly of the N. Y. & E. R. R. company, thence south, etc., containing 2½ acres.

Another of them beginning at the southeasterly wing of the camp ground bridge; thence south 52 degrees east 6 chains and 77 links to a stake in the berme edge of the Delaware & Hudson canal; thence northwesterly along the same as the canal runs to the place of beginning, containing 3-10 of an acre, more or less.

The other of them beginning on the towing path side of the Delaware & Hudson canal on the line of land formerly of Edward Buckley, Chas. W. Buckley and Wade Buckley; thence westerly along said canal to the parcel of land first above described; thence southeasterly along the same to the aforesaid line of lands formerly of the said Buckleys; thence northeasterly along the same to the place of beginning, containing 1½ acres of land, more or less, excepting and reserving from the first and last parcels of land above described so much thereof as was conveyed by first party hereto to the N. Y., L. E. & W. R. R. Co., by deed dated December 10, 1888; excepting and hereby reserving also from any and all of the parcels of land above described so much thereof, if any, as is occupied by the Delaware & Hudson canal and towing path or lies within 15 feet of either side of the said canal, the same having been conveyed by first party hereto to the Cornwall steamboat company, by deed dated June 24, 1889.

Same to Raymond W. Carr, deed dated April 10, 1900, book No. 447, page 297, April 27, 1900. Lands in the town of Deerpark, one of them beginning at a stake at the foot of the slope of the towpath side of the feeder leading from the Neversink river to the Delaware & Hudson canal on a course of south 28 degrees west from a pine tree as the same stood on the 26th day of April, 1852, on the north side of said feeder in the line dividing lands now or formerly of Moses Van Inwegen and James Cuddeback; thence along the foot of the feeder bank south 52 degrees, east 4 chains and 20 links; thence south 28 degrees east 1 chain to the edge of the old dug out bank; thence along the same south, etc., containing 2 acres and 8 rods of land, more or less.

The other of them being a part of lot No. 38 of the first division of the Minisink patent, beginning at the east side of the Neversink river on the line between said lot No. 38 and expense lot No. 2; thence north 37 degrees east along said line 6 chains to a point on the east side of the feeder of the Delaware & Hudson canal; thence up along the east side of the feeder as the same runs so as to take in the berme bank of the feeder 29 chains to the head of the feeder, where the water runs out of the river into the same; thence continuing up the Neversink river, running up the same parallel to the easterly side of the river as the same runs and at one rod distance therefrom (so as to make a streak of one rod wide along the river) so far up the same as another parcel of land lying on the west side of the river, etc., containing about 9 acres of land, more or less, excepting and hereby reserving to the Cornell steamboat company, its successors and assigns, so much of the land hereby conveyed and all such rights to use the feeder and divert the water of the Neversink river as were conveyed to the said the Cornell steamboat company by the party of the first part by deed dated June 24, 1899; also releases and quit-claims to second party, his heirs and assigns, all of its right, title and interest in and to the dam in the Neversink river adjacent to the second parcel of land above described and in and to the feeder extending therefrom to the Delaware & Hudson canal, together with such rights as it may have to

divert the water of the Neversink river at or near said dam; also all of its rights to enter upon a certain other piece of land situate on the westerly side of the Neversink river opposite the second parcel of land above described and to take and remove timbers, brush and other material therefrom, which rights were reserved to first party in deed from first party to Wm. C. Rose, June 19, 1843.

Same to the Port Jervis, Monticello and New York railroad company. Deed dated April 19, 1900, book No. 447, page 321, May 1, 1900. Lands in the town of Deerpark, beginning at the easterly side of the towing path embankment of the Delaware & Hudson canal company, at the distance of 9 chains and 31 links from the canal bridge at Huguenot on a course from the face of the towing path abutment of north 39¼ degrees east; thence south 50½ degrees east 3 chains and 17 links to a stone set in the ground; thence north, etc., containing 1 acre of land, more or less.

Same to Daniel J. Reagan. Deed dated May 29, 1899, book No. 447, page 545, May 25, 1900. Lands in the village of Port Jervis, beginning in the northwesterly line of Clark street, at the point of intersection of said line of street with the southerly line of Main street; thence by said southwesterly line of Clark street southeasterly 115 feet or thereabout to the southeasterly line of lands conveyed to first party as hereinafter recited; thence by said southeasterly line southwesterly to the top of the bank on the berme side of the canal of first party, etc.

Same to Nettie Landwehr. Deed dated June 28, 1900, book 448, page 251, July 9, 1900. Lands in the town of Deerpark beginning in the line between the land formerly of John Van Inwegen and land formerly of Peter G. Cuddeback at the lower edge of the embankment of the Delaware & Hudson canal, being 88 links distant on a course of north 45 degrees east from the middle of a spring at the foot of said embankment; thence as the needle pointed in 1843 south 44 degrees east along said line 1 chain and 69 links to a corner; thence south, etc., containing 1 acre and 22 perches of land, more or less.

The other of them beginning at the northeasterly corner of the parcel of land hereinbefore described; thence north 31¾ degrees east 2 chains and 70 links to the foot of the canal embankment; thence along the same north 89 degrees west 93 links south, etc., containing 51 perches of land, more or less.

Same to Jane Hoag, wife of Robert D. Hoag. Deed dated April 19, 1900, book No. 449, page 326, September 26, 1900. Lands in the town of Deerpark, one of them beginning on the easterly side of the Delaware & Hudson canal at a point distant 70 links northeasterly from the head of lock No. 51; thence south 39 degrees east along the southwest side of a barn, as the same stood in 1856, 3 chains and 83 links to a corner; thence north, etc., containing 60 rods of land, more or less.

Another of them beginning at the north corner of James Green's barn as the same stood on April 26, 1862, and in the line of lands formerly of Moses Van Inwegen; thence north 43 degrees east 5 chains and 80 links to the foot of the slope of the towpath of the Delaware & Hudson canal; thence along the same south, etc., containing 87 rods of land, more or less.

The other of them beginning at the north corner of a lot conveyed by Moses Van Inwegen and wife to Benjamin Plotts; thence north 43¼ degrees west 1 chain and 61 links to a corner at the foot of the canal bank; thence south, etc., containing one quarter of one acre and about 20 perches of land, more or less. Subject to same exceptions and reservations as are contained in the several deeds to first party, excepting and reserving from the parcels of land herein described so much thereof as was conveyed by first party to the Cornell steamboat company by deed dated June 24, 1899.

Same to Cornell steamboat company. Deed dated June 24, 1899, book No. 453, page 63, May 20, 1901. All its right, title and interest, claim and possession in and to the Delaware and Hudson canal, including canal bed, locks and their appurtenances, towpath rights, to divert and use water for canal purposes from the Lackawaxen, Neversink and Delaware rivers, Roundout creek and the small stream near Ellenville, so long as said canal shall be main-

tained as such, easements, aqueducts and bridges, beginning at the side lock at Eddyville in the town of Ulster, state of New York, and ending at the guard lock upon the easterly bank of the Lackawaxen river at Honesdale, in the county of Wayne, state of Pennsylvania; also all its right, title, interest, claim and possession in and to all the lands heretofore used in the operation of said canal lying between the guard lock at Eddyville and Creek locks in the town of Rosendale, whether the same be covered by water or not; also all its right, title, interest, claim and possession in and to a strip of land 15 feet wide on each side of the entire canal wherever the Delaware company has title to such land, excepting and reserving to the Delaware company such parts thereof, if any, as it may desire to sell or use in connection with any buildings now owned by it, together with all the estate and rights of the Delaware company in and to the premises aforesaid, and also all franchises owned, possessed or enjoyed by the Delaware company in connection with the ownership, use and operation of said canal, not including any lands and buildings not above described. To have and to hold the above granted lands, premises, franchises, easements and appurtenances unto the said Cornell steamboat company and its successors and assigns.

Second. The Cornell steamboat company hereby covenants and agrees that it will in all respects undertake and perform the obligations imposed upon the Delaware company by said chapter 469 of the laws of 1899, and especially those specified in section 4 thereof, to which reference is hereby made for greater particularity, and will in all respects indemnify and save harmless the said Delaware company of and from any damages, claims or demands arising under the provisions of said act. The Cornell company further covenants and agrees that it will discharge and pay any and all taxes which may be levied upon the premises hereby conveyed from and after the date hereof.

Erie railroad company to Charac J. Van Inwegen. Deed dated June 18, 1900, book No. 449, page 353, October 1, 1900. Lands in the town of Deerpark, beginning at a point in the division line

between lands of the parties hereto, said line being the south easterly line of land heretofore conveyed by James Caskey and others to the N. Y. & E. R. R. Co., by deed dated May 3, 1848 etc., said point being distant 235 feet westerly at right angles from the center line of location of the railroad of said first party, and said point also being the westerly corner of land contracted to be conveyed by said second party to first party; thence running along said division line between lands of the parties hereto on a course of south 61 degrees and 25 minutes west 149 feet to a corner; thence running along another division line between lands of the parties hereto on a course of north 8 degrees and 35 minutes west 413 feet, etc., containing 66-100 of an acre, more or less.

Raymond W. Carr and wife to the Neversink light and power company. Deed dated July 12, 1900, book No. 448, page 359, July 24, 1900. Lands in the town of Deerpark, beginning at a stake at the foot of the slope on the towing path side of the feeder leading from the Neversink river to the Delaware & Hudson canal on a course of south 28 degrees west from a pine tree as the same stood on the 26th of April, 1852, on the north side of said feeder in the line dividing the lands now or formerly of Moses Van Inwegen and James Cuddeback; thence along the foot of the feeder bank south 52 degrees east 4 chains and 20 links; thence south, etc., containing 2 acres and 8 rods of land.

The other of them being a part of lot No. 38 of the first division of the Minisink patent and containing about 9 acres of land, more or less. And in consideration of the premises the first parties hereby remise, release and quit-claim to second party, its successors and assigns, all of their rights, title and interests in and to the dam in the Neversink river adjacent to the second parcel of land above described and in and to the feeder, extending therefrom to the Delaware & Hudson canal, together with such rights as they may have to divert the water of the Neversink river at or near said dam; also all of their rights to enter upon a certain other piece or parcel of land situate on the westerly side of the Neversink river opposite the second parcel of land above

described and to take and remove timber, brush and other material therefrom, etc. (Recites deed to Raymond W. Carr by the Delaware & Hudson Co., by deed dated April 19, 1900.)

Nothing else found.

W. G. TAGGART
*Clerk*

ALBANY, N. Y., *October* 18, 1901

OLIN H. LANDRETH, *Consulting Engineer, State Department of Health, Union College, Schenectady, N. Y.:*

Dear Sir—I am in receipt of your report upon an investigation of a nuisance in the town of Deerpark, caused by defective drainage of the abandoned Delaware and Hudson canal.

In reply you are informed that a copy of your report has been submitted to the governor.

Very respectfully,
DANIEL LEWIS
*Commissioner of Health*

ALBANY, N. Y., *October* 12, 1901

OLIN H. LANDRETH, *Consulting Engineer, State Department of Health, Union College, Schenectady, N. Y.:*

Dear Sir—I am in receipt of your communication of the 10th instant, enclosing your report and accompanying papers in connection with your investigation of a complaint made by the board of health of Deerpark concerning an alleged nuisance caused by the defective drainage of the abandoned Delaware and Hudson canal.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*
By T. A. STUART
*Chief clerk*

# Special Investigations and Reports

# NIAGARA FALLS

## Acker process company

NIAGARA FALLS, N. Y., *June* 15, 1901

L LEWIS, *State Commissioner of Health, Albany, N. Y.:*

r Doctor—Three years ago the Acker process company of ty started to build a factory for the manufacture of caustic and bleaching powder in the center of a thickly populated esirable residence section of this city, corner Third street Valnut avenue.

ut six months ago they commenced to manufacture (ex- ent, rather, in the manufacture of their products). They new process of their own invention for the electrolysis of NaCl) and the combining of the Na with lime.

e they have been going the air at most all hours of the night for blocks around contains a strong odor of chlorine. uit and shade trees, grass and garden truck, such as let- onions, etc., and the flower beds within two blocks of the y are blighted, discolored and stunted in growth or killed. s shrivel up, turn brown or black and may be ground to r in the hand and fruit drops off, leaving bare branches es. Grass blades look burned as though by fire. Some ago a largely signed petition from the residents about the y was presented to the board of health, asking for the ssion of this factory as a nuisance. A committee of the was appointed to take evidence. This committee held l meetings, visited the vicinity and the factory, obtained the ony of several of the residents and property owners, show- at vegetation was affected as stated, and also that the of chlorine in the air outside and inside of their houses some of them cough, nauseated them, gave them head- a disinclination to eat their meals, and prevented them enjoying the comfort, rest and pleasure of their home life. ninent attorneys *in this city* claim that the board of health *abate or suppress this* nuisance unless it can be posi-

tively shown that the amount of chlorine in the air is a serious menace to human life and health, that with the destruction of vegetation, depreciation in the value of desirable residence property and general disagreeableness to most people of the smell of chlorine, the board of health have absolutely nothing to do. I do not quite agree with this opinion, believing that local boards of health are given power to abate all or nearly all kinds of nuisances. The Acker company have had their chemist analyze samples of air taken at various times and at various distances from the plant and claim that there is at no time more than one part of Cl to 5,000,000 parts of air, and that at most times the amount is too small to be measured. They contradict all statements as to Cl being in such quantity as to in any way affect human life or health. They have many thousands of dollars invested in their plant, large brick three and four story buildings, employ 150 men, many of them skilled hands, and intend to fight the matter through our highest state court if proceeded against.

The chlorine in the air may often be detected by smell at my residence, three blocks from the factory. The destruction of trees, grass and all kinds of vegetation the company do not attempt to deny, because it is to be seen by any person.

Our city attorney is now looking over the evidence of property owners and is to report at a meeting of the board of health Thursday evening next, when some action regarding the matter is to be taken. Has your Department any opinions, rulings, court decisions or records of like cases that would aid us in the solution of this matter?

Very truly yours
JAMES H. MEEHAN, M. D.
*Health officer*

P. S.—I can forward samples of trees, grass, etc., if desired, or copies of evidence of residents. I mark sections 53 and 54, pages 25 and 26, also section 72, page 33, of our sanitary code and enclose the same.

J. H. M.

ALBANY, N. Y., *June* 18, 1901

JAMES H. MEEHAN, M. D., *Health Officer, Niagara Falls, N. Y.:*

Dear Sir—We are in receipt of your communication of the 15th instant calling attention to an alleged nuisance caused by a strong odor of chlorine from the factory of the Acker process company, which is located in a thickly populated section of your city.

While it is not the province of a board of health to consider the destruction of vegetation or the depreciation of the value of property by reason of the process of manufacture referred to, if in the judgment of your board the health of residents of the locality is affected by the escape of gases from the Acker process company's plant, the board would be justified—in fact, it would be its duty—to require the abatement of the nuisance.

From your statement of the case it would appear proper to class the business of the Acker process company as a noxious trade, subject to such rules as the local board may prescribe; or if desired, this Department will be pleased to make an investigation for you.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

By T. A. STUART

*Chief clerk*

ALBANY, N. Y., *June* 18, 1901

GEORGE BLUMER, *Director Bureau of Pathology and Bacteriology, State Department of Health, Albany, N. Y.:*

Dear Sir—I enclose herewith a communication from Dr. Jas. H. Meehan, health officer of Niagara Falls, N. Y., concerning an alleged nuisance caused by the Acker process company, and would ask:

To what extent can irrespirable gases be permitted to be given off so as not to constitute a nuisance; that is, to what state of dilution?

Will the evidence of effect on vegetation and on the respiratory passages as given suffice to make it a nuisance?

Can such gases be controlled? Can chlorine be held by hood and fan, and if forced into a furnace is it combustible, or can it be held by "washing" process or by chemical action?

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

BENDER HYGIENIC LABORATORY

ALBANY, N. Y., *June* 22, 1901

DANIEL LEWIS, M. D., *Commissioner State Department of Health, Albany, N. Y.:*

Dear Sir—On June 18th I received from you a letter regarding an alleged nuisance caused by the Acker process company, with the request that I inform the Department regarding effluvian nuisances of a gaseous character.

I also received a letter from Dr. James Meehan, the health officer, which I herewith return.

The first question which you ask is, "To what extent can irrespirable gases be permitted to be given off so not to constitute a nuisance; that is, to what state of dilution?"

In answer to this question I would say that I have been unable to find any statement regarding any particular state of dilution. Most of the authors seem to think that the question of the strength of obnoxious gases plays very little part in the constitution of the nuisance so long as it can be shown that they are injurious to health. Billings in Pepper's system of medicine, 1885, quotes a decision of Mansfield in the case of Rex *vs.* White, the quotation being as follows: "It is not necessary that the smell be unwholesome, it is enough that it renders the enjoyment of life uncomfortable." Further, Billings says, "If a man collects on his own premises for his own use any material such as water or fluid, he is bound to retain it within his own

premises; or let none of it escape in such a way as to damage others. And this holds good as regards gases, vapors and odors."

The subject of effluvian nuisances is most extensively taken up in a supplement of the 6th annual report of the Local government board, published at London, 1876-7. This report is by Ballard, and I would refer your health officer to it as containing an excellent résumé of the whole subject. Ballard refers to the fact that certain chemical vapors are irritating to the mucous surfaces. The following quotation from his paper bears on this point: "There is, however, sufficient evidence to show that irritating trade effluvia do sometimes effect mischief by virtue of their irritating quality on the person exposed to them even at a considerable distance from the works from which the effluvium issues, and after they have undergone considerable atmospheric dilution."

The symptoms complained of by the individuals exposed to the gas as described in Dr. Meehan's letter are essentially the same as those produced by other forms of disagreeable gases. According to practically all of the authors on the subject, anything which interferes with the health of an individual can be legally declared a nuisance and suppressed as such. Certainly most authors regard the symptoms above mentioned as distinct departures from health, and Ballard reports one case in which the effect of certain gases was to produce a fatal attack of hematemesis from gastric ulcer. I am therefore of the opinion that the prominent attorneys whom Dr. Meehan mentions in his letter are entirely mistaken in their opinion that the board of of health cannot abate or suppress this nuisance. I feel quite certain that if witnesses could be procured from among the individuals who have presented symptoms described by Dr. Meehan the board of health could proceed against the Acker process company.

Finally, I would state that I am personally acquainted in a general way with the methods employed by the Acker process company in the manufacture of caustic alkali and chloride of

lime. The process is originally one which has for its object the manufacture of a caustic alkali which is free from water. This is done by combining common salt with molten lead. As a result of this process chlorine gas is given off, and the chloride of lime is manufactured by exposing lime to the action of this chlorine gas. I feel tolerably certain that if this latter process is carried on properly there should be no escape of chloine into the atmosphere surrounding the works. I would suggest then that in all probability it will be found, if the works are investigated, that the chlorine is improperly combined with the lime, or else that there is some leak in the pipes conveying the chlorine.

Ballard says in his article, "The tendency of the inquiry is toward establishing this point, namely, that all, or nearly all, of the trades now causing offense * * * may be so carried on as not to cause offense at all, or only offense of such a trifling nature as could well be tolerated by persons who live in communities."

Of course I have not gone into this matter from a purely legal standpoint, as this is a side of the subject which I do not understand. I think that in all probability the attorney-general of the state would be able to corroborate or deny the statements having a legal aspect.

Respectfully yours
GEORGE BLUMER

ALBANY, N. Y., *August* 20, 1901

GEORGE BLUMER, *Director Bureau of Pathology and Bacteriology, State Department of Health, Albany, N. Y.:*

Dear Sir—I enclose herewith papers in a complaint concerning an alleged nuisance caused by odor of chlorine from the factory of the Acker process company, located at Niagara Falls, N. Y.

Agreeable to an understanding had with Hon. M. B. Butler, mayor of Niagara Falls, you are requested to visit that city for

the purpose of investigating as to the alleged nuisance, and if found to be as stated, to make such recommendations as in your judgment are necessary in the case.

Your bill for services and expenses is to be paid by the city of Niagara Falls, as agreed upon by Mayor Butler.

In making your report to this Department, kindly return enclosed papers.

As the authorities are anxious to have the investigation made as soon as possible, you are requested to give the matter your early attention.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

BENDER HYGIENIC LABORATORY

ALBANY, N. Y., *September* 4, 1901

DANIEL LEWIS, *Commissioner State Department of Health, Albany, N. Y.:*

Dear Sir—Obedient to your request and by agreement with the Hon. M. B. Butler, mayor of Niagara Falls, I have visited that city and inspected the factory of the Acker process company in regard to its being a nuisance. My inspection consisted in an examination into the process at the factory, and also an examination of the trees in the neighborhood of the factory and an interview with a number of the residents in the district affected by the fumes.

In his original letter to the Department, the health officer, Dr. James H. Meehan, called attention to the fact that there was present in the air for some distance around the factory a strong odor of chlorine gas; that the fruit and shade trees in the neighborhood were affected, the foliage and fruit being destroyed, and that the health of certain of the inhabitants was also impaired, the chlorine gas causing them to cough, nauseating them and giving them headache.

INSPECTION OF THE FACTORY

The factory is situated at the corner of Third street and Walnut avenue in a thickly populated district of Niagara Falls, many of the houses in the neighborhood being detached structures surrounded by a small amount of land, and very often owned by their occupants. One portion of the factory abuts directly upon the street, but the portion in which the manufacturing process is carried on does not do so, but is situated some 50 feet from the sidewalk line. The process consists in the manufacture of caustic soda from common salt by an electrolytic process. The salt is placed in furnaces which contain molten lead, which serves as the cathode, the anode being supplied by a series of cubical masses of graphite which extend into the furnaces from above, being suspended on crossbars. During the disintegration of the salt chlorine is set free and is sucked by a forced draft from the furnaces by means of a series of channels which lead it into a large metal pipe. This chlorine after being purified of a small amount of acid which it contains is combined with lime to form a bleaching powder, which is also one of the products of the process. During disintegration of the salt in the furnaces it is necessary from time to time to remove the coverings from these, and in case one of the anodes breaks, which is not uncommon, it is necessary to uncover the greater portion of the furnace. During this process chlorine gas necessarily escapes into the air of the furnace room.

It will be seen from this description that there are three ways in which chlorine gas in any quantity can get into the air of the neighborhood. The first of these is through the furnace room, and the second possible point of escape would be a leak at some point in the main conducting pipe which conveys the chlorine for the manufacture of chloride of lime. It also possible that an excess of chlorine might be added to the lime so that some of this would escape.

As originally designed the vapors from the furnace room were carried up to the roof by a forced draft and escaped into the

open air. In the original plan also any excess of chlorine in the chloride of lime process, and also a certain amount of fine chloride of lime dust was driven from the end of the building in which the lime was manufactured into the open air. Both of these defects have, however, at the present time been partially remedied, and the Acker process company is now taking steps to further remedy them. Since complaint was made to the local board of health the ventilators have been removed from the top of the furnace room, which has been made air-tight at this point, and the vapors are now carried away by a forced draft situated just below the roof line. These vapors, instead of escaping as before into the open air, are conducted through pipes, and finally are thoroughly commingled with a spray of lime water in a tower built for that purpose. The escape of chlorine and dust which formerly took place from the end of the chloride of lime house has also been remedied to a very large extent by subjecting the dust to the action of steam, which saturates it with moisture, causing it to fall to the floor.

On the day of my visit I could detect absolutely no smell of chlorine in the neighborhood of the factory, and it was hardly perceptible in the grounds of the factory itself. I inspected the exit on the roof for the vapors coming from the furnace room, after passing through the lime water process, and was able to detect only the faintest smell of chlorine. The factory, however, was not running its entire series of furnaces, though the company claimed they were running as many as had been used right along during the time the complaint had been made. The company at the time of my visit were enlarging the lime-water tower to twice its present dimensions and putting in apparatus for a more complete mixing of the lime water.

The investigation of the trees in the neighborhood of the factory showed that here and there within a radius of two blocks, or even more in places, certain trees were blighted, their leaves yellow or yellowish-brown, dried or shriveled, or in some instances entirely fallen off. This same condition was not present in other parts of the city, and was, I think, without doubt due to the action of chlorine gas.

A number of the houses in the infected district were visited, and the occupants showed that besides the effect upon trees and plants the gas had a corroding effect upon metal.

As regards the effect upon health I questioned a number of the individuals living in the infected area, and also inspected some affidavits which had been made by individuals whom I was unable to see personally. As a result of the examination I was forced to conclude that associated with the escape of gas into the atmosphere in any quantity certain individuals were unpleasantly affected. The symptoms complained of consisted of soreness of the throat with coughing, evidently from the irritating effects of the fumes. Furthermore, in some individuals there was present nausea, loss of appetite and headache. As far as I could determine no very serious effects had been produced by the gas in any case, though it was stated that one or two individuals suffering from pulmonary tuberculosis had been forced to leave the neighborhood on account of the coughing produced by the irritating fumes.

Taking the standpoint that any aberration from the normal must be considered as injurious to health, which is the view laid down by most writers on legal medicine, there seems to be no doubt that the Acker process company can still be declared a nuisance. While personally I was unable to detect any unpleasant effect in the neighborhood of the factory, the testimony of reliable witnesses seems to leave no doubt that at times harmful fumes are given off by the process. At the same time I am of the opinion that the effect on health is very slight, and that the escape of unwholesome vapors can be in a large measure, if not completely, prevented. I believe that Mr. Acker, who has charge of the process, has done and is doing everything in his power to neutralize the escaping chlorine gas, and I am of the opinion that the complete neutralization of this gas is merely a question of subjecting it to the action of a sufficient quantity of lime water and properly mixing it with the same. It therefore seems to me that though the factory can undoubtedly still be declared a nuisance, that it would not be advisable to take

any further steps in the matter until the completion of the improvements projected by the company. It would seem undoubtedly true that since the first improvements were made, i. e., the neutralization of the gas from the furnace room, chlorine has escaped at times in large quantities. Mr. Acker explains this by the fact that on one or two occasions the power has run short and allowed the furnaces to cool down, and it has become necessary for the workmen to open up the furnaces and break up the contents, thus allowing the escape of very large quantities of gas. Arrangements are being made so that this cannot occur again, and furthermore, even though it does occur after the completion of the lime-water tower, there should be a sufficient quantity of lime water to neutralize a quantity of chlorine considerably larger than that usually given off.

Respectfully submitted.

GEORGE BLUMER

NIAGARA FALLS, N. Y., *September* 19, 1901

*To the Mayor and Board of Health, City of Niagara Falls, N. Y.:*

Gentlemen—You are doubtless aware of a complaint having been filed with the State Department of Health against the Acker process company of your city and also know that Dr. George Blumer of the Bender laboratory was sent here at my suggestion to inspect the plant.

The sum and substance of Dr. Blumer's report, as published, and of his opinion, as expressed to me, was to the effect that he found no very serious effects which had been produced by gas previous to his visit, and also expressed the opinion that everything within the power of the proprietors of the plant was being done to neutralize what little escaping gas there might be, and that the means already taken would, in his judgment, completely remove every cause for complaint.

Notwithstanding Dr. Blumer's report to this effect I have taken the time to personally inspect the works and the vicinity and carefully considered the plans already adopted and to be followed for rendering any further cause for complaint abso-

lutely impossible. I am convinced that the works cannot possibly be regarded as a nuisance detrimental to the health and lives of the people in the neighborhood, and it is my judgment that any action against the company should be postponed until we are able to determine whether the nuisance has been permanently abated by the means employed, and I earnestly recommend that you and your board of health shall take this course.

At a later date the State Department will again investigate conditions and report the same to you.

Respectfully submitted.

DANIEL LEWIS
*Commissioner of Health*

## THOUSAND ISLAND PARK

Upon receipt of a complaint made by Mrs. Eliza H. Jones, of Utica, N. Y., as to alleged unsanitary conditions existing at Thousand Island Park, Prof. Olin H. Landreth was directed to make an investigation, his report upon which follows:

ENGINEERING SCHOOL OF UNION COLLEGE

SCHENECTADY, N. Y., *July* 22, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—Agreeably to your telegraphic instructions of the 19th instant, I visited Thousand Island Park on the 20th, spending the day in the examination of the source of water supply and incidental circumstances.

Under the impression formed by the local management from the report on the biological examination made at the Bender laboratory and dated July 9th, I found preparations were being made to simply extend the intake pipe of the water supply further out into the channel of the river. After spending the day in a close study of the currents of the river and bay in the

immediate vicinity of the intake, and after hearing of the methods used in the taking of the sample of water which was sent to the Bender laboratory, I am clearly of the opinion that there is no positive guaranty that a simple extension of the intake blindly and without a much more thorough study of the currents and the character of the water at different points would insure suitable water.

If the report of the 9th instant correctly represents the water taken into the intake, there is no question of its unsuitability and a need for change of location of the intake. Even with a reasonable difference of quality as shown from a proper sampling, I am of the opinion that the location of intake is not the best one, though I am not able to point out the best location without a more thorough examination of the currents and the corresponding quality of the water at the different points than I felt warranted in making under the instructions. There should be made a thorough study of the currents by the aid of submerged floats and a current meter, together with samplings of the river water for biological examination taken at the different points thought to be favorable. I can do this if directed, and in any case it should be done by *some one* before the local management will be warranted in expending any money for the change.

The currents of the river are quite complicated at the place of the supply, some of them flow from contaminating sources and others from directions apparently free from such sources; and there are so many of these sources of pollution on this and other islands just upstream that it is not a simple matter to avoid the pollution from these sources.

While there I took a sample of water from the intake now used and packed and shipped it to the Bender laboratory with instructions to Dr. Blumer to examine and report to you as soon as possible, and to charge the cost of this second examination to the local board of health *unless* otherwise directed. If you think proper you can direct Dr. Blumer to have this made at the *expense of the Department*, as I do not consider the former

sampling to have been properly made, though I shall not be surprised to find that the water is as bad as the former report showed.

I will come in and talk the matter over with you further if desired. Agreeably to your directions I secured the water report from Mr. Brown and herewith enclose it to you.

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

BENDER HYGIENIC LABORATORY

ALBANY, N. Y., *July* 9, 1901

DANIEL LEWIS, M. D., *Commissioner State Department of Health, Albany, N. Y.:*

Dear Sir—I herewith submit the result of the examination of water sent by W. E. Johnson, secretary of the State Department of Health, marked "St Lawrence river at intake (Thousand Island Park)."

Specimen was taken at 7 p. m. July 3, 1901; was received at the laboratory and examined July 5, 1901.

Number of colonies per cubic centimetre was 2430.

Fermentation test—Nine tubes were each inoculated with one cubic centimetre of water. All of these showed gas, the gas formation in three of these corresponding in its characteristics with the bacillus coli communis.

Qualitative examination did not show the presence of other pathogenic organisms.

The sample of water was clear, and taste and smell were negative.

Remarks—This water must be condemned as a drinking water. It shows the presence of the bacillus coli communis, which is an index of sewage contamination.

Respectfully submitted.

A. T. LAIRD, M. D., FOR DR. GEO. BLUMER

BENDER HYGIENIC LABORATORY

ALBANY, N. Y., *July* 9, 1901

DANIEL LEWIS, M. D., *Commissioner State Department of Health, Albany, N. Y.:*

Dear Sir—I herewith submit the result of the examination of water sent by W. E. Johnson, secretary of the State Department of Health, source marked "Well."

The water was collected at 4 p. m. the 3d of July; was received at the laboratory and examined July 5th.

The number of colonies to the cubic centimetre was 3975.

Fermentation test—Nine tubes were each inoculated with one cubic centimetre of water. Seven of these showed gas, the gas formation in two of the seven corresponding in its characteristics with the bacillus coli communis.

Qualitative examination did not show the presence of other pathogenic organisms.

The sample of water received was clear, and smell and taste were negative.

Remarks—This water must be absolutely condemned as a drinking water. It shows the presence of the bacillus coli communis, which is an idex of sewage contamination.

Respectfully submitted.

A. T. LAIRD FOR DR. GEO. BLUMER

BENDER HYGIENIC LABORATORY

ALBANY, N. Y., *July* 25, 1901

DANIEL LEWIS, M. D., *Commissioner State Department of Health, Albany, N. Y.:*

Dear Sir—I herewith submit the result of the examination of water from the intake of the Thousand Island Park river supply in the St. Lawrence river sent by Olin H. Landreth, consulting engineer of the State Department of Health. The specimen was taken July 20, 1901; was received at the laboratory and examined Sunday morning, July 21, 1901, at 11 a. m.

Number of colonies to the cubic centimetre was 4446.

Fermentation test—Ten tubes were each inoculated with one cubic centimetre of water. All of these showed the presence of gas, the gas formation in four of them corresponding in its characteristics with the gas formation of the bacillus coli communis.

Qualitative examination showed the ordinary water bacteria, and a chromogen producing a greenish color in the media. The sample of water received was clear; the smell and taste were all right.

Remarks—This water must be absolutely condemned as a drinking water, as it shows evidence of contamination with organic matter.

Respectfully submitted.

ARTHUR T. LAIRD, M. D., FOR DR. GEO. BLUMER

SCHENECTADY, N. Y., *September* 2, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—I beg to report that agreeably to your instructions of August 5th and 16th, I visited Thousand Island Park on August 29th to 31st for the purpose of investigating farther the matters of water supply and sewerage of the park, and that pending the receipt of the results of the bacteriological examination of the samples of water herein described, I have to submit the following preliminary report on my investigation:

On reaching Thousand Island Park I had an interview with the president, secretary, treasurer and three members of the board of trustees of the association, which happened to be in session, and after considerable discussion, the board of trustees concluded to co-operate in the investigation and agreed to meet the traveling and the local expenses incurred on the examination, the State Department of Health to pay the charges of the bacteriologist and the engineer for this examination. As a result of my investigation of the river soundings, currents, etc., I finally selected for bacteriological examination six samples of water from the following points:

Sample I, taken from top of screen chamber of present intake.

Sample II, taken 8 feet below water surface in 10 feet of water, 600-700 feet southwest of rocky point on northwest side of entrance to Crystal bay, opposite lot No. 1520.

Sample III, taken on line of present intake pipe extended, 250 feet from present intake chamber. Taken 6 feet deep in 8 feet of water.

Sample IV, taken along northerly side of deep channel, 900-1200 feet southwest from Gridley's dock, opposite lot No. 115. Taken 14 feet deep in 16 feet of water.

Sample V, taken at point half way between last point and rocky point on southeast side of Crystal bay, opposite lot No. 27. Taken 11 feet deep in 13 feet of water.

Sample VI, taken from faucet in Columbian hotel after letting water run for three minutes. Water from reservoir.

These samples were all carefully and properly taken, packed in ice and shipped to the Bender laboratory, Albany, on the same evening and about four hours after taking. The samples were also marked as above.

On receipt of the results of the bacteriological examination of these samples, I will submit my full report on the water and sewer examination, with recommendations.

I am, dear sir,

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

ALBANY, N. Y., *September* 7, 1901

DANIEL LEWIS, M. D., *Commissioner State Department of Health, Albany, N. Y.:*

Dear Sir—Following is the report on the samples of water recently submitted by Olin H. Landreth from Thousand Island Park:

Water No. 1—Number of bacteria per cubic centimetre on agar plates, 156; on gelatin plates, 4400; average, 2980. Theobald Smith's test did not show any organisms giving the colon reactions. No other pathogenic organisms were found.

Water No. 2—Number of bacteria per cubic centimetre on agar plates, 2900; on gelatin plates, 6300; average, 4600. Colon bacilli were present in this water in the proportion of two colon bacilli to each 4 cubic centimetres of water. Liquifying colonies were also present.

Water No. 3—Number of bacteria per cubic centimetre on agar plates, 5700; on gelatin plates, 1466; average, 3583. Colon bacilli were present in this water in the proportion of three bacilli to each 4 cubic centimetres of water. Liquefying colonies were also present here.

Water No. 4—Number of bacteria per cubic centimetre on agar plates, 133; on gelatin plates, 67; average, 100. No pathogenic organisms were present in this water.

Water No. 5—Number of bacteria per cubic centimetre on agar plates, 900; on gelatin plates, 400; average, 650. Colon bacilli were present in this water in the proportion of one bacillus to each 4 cubic centimetres of water. Liquefying colonies were also present.

Water No. 6—Number of bacteria per cubic centimetre on agar plates, 1900; on gelatin plates, 1360; average, 1630. No colon bacilli could be detected, but liquefying organisms were present as well as the ordinary water bacteria.

Remarks—Water No. 4 is, from a bacteriological standpoint, a first-class drinking water. Waters No. 1 and No. 6 show no evidence of organic contamination and are probably not injurious to health, though the bacterial count is too high for first-class drinking water. Waters Nos. 2, 3 and 5 show distinct evidence of organic contamination.

Respectfully submitted.

GEORGE BLUMER

# BATH

## Soldiers and sailors' home

BATH, N. Y., *December* 21, 1901

*To the President of the New York State Board of Health, Albany, N. Y.:*

Sir—I and others who are somewhat interested in the matter are anxious to know if there is a general law throughout the state forbidding persons to inhabit and sleep in cellars, or does such a law only appertain to New York city? If there is such a law, will you kindly inform me where and how a copy of such law can be obtained.

The reason I ask for such information is this: There are now at the Soldiers and sailors' home at this place in the neighborhood of 200 veteran soldiers and sailors of the late civil war now compelled to sleep in the cellars under the barracks, which are mostly built on made ground and are damp and unhealthy; also a number of sick men who are compelled to sleep in the cellars of the hospital, the place being overcrowded.

Hoping to receive an answer to this, you will permit me to subscribe myself

Yours respectfully
MRS. A. C. ACKERMAN

BATH, N. Y., *December* 30, 1901

DANIEL LEWIS, *Commissioner:*

Dear Sir—I have the honor to report the number of men sleeping in cellars at the New York state soldiers and sailors' home as follows:

| | |
|---|---|
| In the hospital | 12 |
| Company A building | 13 |

| | |
|---|---|
| Company B building | 25 |
| Company C building | 10 |
| Company D building | 14 |
| Company E building | 18 |
| Company F building | 15 |
| Company H building | 3 |
| Company I building | 40 |

In all of the cellars the floors are cement, are dry, and side walls whitewashed. Ventilation is very poor in all the buildings except Companies H and I. The hospital basement, in my opinion, is unfit for occupation. This is the only unsanitary condition that I find.

In Company I there are 40 beds clean and perfect, making a very handsome basement dormitory.

The home has proper accommodations for about 1600 inmates, while today there were present 1796. The only suggestion I could make would be extra buildings for the relief of this congestion.

I am, very respectfully

G. C. McNETT

ALBANY, N. Y., *January* 4, 1902

HON. BENJAMIN B. ODELL, JR., *Governor of the State of New York, Albany, N. Y.:*

Dear Sir—On December 24, 1901, this Department received a communication from Mrs. A. C. Ackerman of Bath, Steuben county, N. Y., calling attention to alleged unsanitary conditions existing at the Soldiers and sailors' home at that place, claiming that many of the inmates were compelled to sleep in the cellars, which are mostly built on made ground; also that a number of the sick men were sleeping in the cellars of the hospital building, the place being overcrowded.

In view of the complaint made by Mrs. A. C. Ackerman, the attention of Dr. G. C. McNett, the health officer of Bath, was

called to the matter with instructions to investigate as to the alleged unsanitary conditions and overcrowding of the buildings, and to report the result to this Department.

For your information I enclose herewith a copy of the complaint made by Mrs. A. C. Ackerman, also a copy of the report made upon investigation of same by Dr. G. C. McNett.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

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# WHITE PLAINS

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**East avenue school**

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WHITE PLAINS, N. Y.

DANIEL LEWIS, *Health Commissioner:*

Dear Sir—We the undersigned wish to call your attention to the sanitary condition of the East View avenue public school, district No. 3, where about 170 scholars attend. There being no sewer connections to said school, hence outside closets are used, and the surrounding neighborhood being without sewers the use of closets in the yards or cesspools are used, many of which have not been cleaned out for years. No less than 20 of these cesspools and outside closets are within 400 yards of the school. In the wet season they fill up with water and overflow, which we consider very unhealthy. There has been quite an epidemic of scarlet fever among the children all winter, there being a number that have just broken out.

The board of health have ordered a sewer through the street. The board of trustees referred the matter to the sewer committee some three months ago. They have never made a report as yet, and it is quite apparent they do not intend to do so.

The laws of the state compel us to send our children to school and they should have sanitary protection. Hence we appeal to you.

Augustus Garritt, 12 Oakley avenue
Fred. Hardy, 15 East View avenue
Thaddeus D. Tompkins, 13 East View avenue
I. J. Gorton, 48 Lake street
Fred. N. Foster, No. 2 Kensico avenue
S. Lapedur, 36 Kensico avenue
A. Heumann, 46 Kensico avenue
August Sanberg, 7 Cottage avenue
Hiram E. Mead, 33 Lake street
Wm. J. Mead, Lake street
Geo. H. Foster, Kensico avenue
James L. Thompson, Bark avenue
Chas. T. Setson
Werner Epfert
Fred. Stephens, Cottage avenue
William Starpey, Cottage avenue
Henry Mercer, 45 Kensico avenue
Wallis E. Sniffin, Lake street
M. Griffin, Lake street
Civilion F. Horton, 52 Oakley avenue
Irving Horton, 54 Oakley avenue
Mary G. Horton, 40 Oakley avenue
Helene P. Horton, 42 Oakley avenue
Edward O'Connor, 38 Oakley avenue
Joseph Grimm, 27 Oakley avenue
Fred Wolf, 48 Oakley avenue
Louis Jensen, 6 Oakley avenue
Elbert B. Winn, 6 Paulding street
John P. Mahoney, 29 East View avenue
William Haack, 21 Westchester avenue
Jacob Stahlschmidt, 9 Westchester avenue
August Hoffner, 31 Westchester avenue
S. K. Horton, 1 East View avenue

Please give this prompt attention and oblige,

Yours truly
S. K. HORTON

T. A. STUART, *Chief Clerk, Department of Health, Albany, N. Y.:*

Dear Sir—Agreeably to instructions from Commissioner Lewis, State Department of Health, embodied in order of July 26, 1901, proceeded from Mamaroneck, N. Y., to White Plains to investigate East View avenue public school, district No. 3, upon complaint of about 33 petitioners to State Department of Health, relative to the sanitary condition of said school building and locality.

August 1, 1901, called upon Health Officer Charles E. Birch; with him visited the school building in complaint and locality. Learned no formal complaint had been made to the health board. The school superintendent, S. R. Shear, had on two or three occasions called his attention to the propriety of sewer extension in the new locality and coming necessity for it, by reason of scarlet fever and increased population. Further stated the board of health have certified their action to the board of trustees according to law that it is necessary a trunk line sewer be constructed through East View avenue to accommodate residents in the locality, and likewise the new school building there, erected two years ago.

The board of trustees have honored their certificate, and have taken steps to put in a new trunk line; unfortunately the locality is low, and but one way to get to the Westchester avenue main trunk line by going through private property. Over one year ago plans were prepared by Carpenter & Farley, surveyors. The board of trustees have ordered the present surveyors, Byrne & Darling, to prepare specifications and submit the same to the next meeting of the board, the present week, with the view of adopting the same and advertising for bids.

It is further stated that the board of health have not considered the sewer extension an imperative necessity and are pursuing a conservative course. Already the village authorities have expended a large amount of money, estimated at several hundred thousand dollars, to perfect the sewer system in the older portion of the village where necessity demands and exigency for service

It is the purpose of the authorities to expedite matters in the locality of complaint preparatory to cold weather. This information was furnished by W. D. Sutherland, clerk of the board of trustees.

Inspected the school building with Health Officer Birch; stands on high ground, sandy soil, good drainage, constructed of brick, two stories high, good light and ventilation, with airy basement and cemented floor. School attendance, 170 pupils. In the basement are provided closets of modern pattern, and appliances for sewer attachment when available. The closets now in use are open privy vaults, with small wooden structures over them of ordinary design and finish, situated about 50 feet from building. The building is now being renovated and undergoing ordinary repairs for commencement of school term. Nothing presented upon inspection detrimental or offensive to public health. To the contrary, unusually clean and sweet. It would be well to state that the basement has just been whitewashed, and the privy vaults deodorized with lime. Some 15 or 20 new buildings have been constructed in the locality, using outdoor privies and cesspools. The street grading is unfinished. It is the intention of the authorities to be as progressive as possible with the public work and correct any unsanitary condition that may exist.

The matter stands as found. Nothing to decide. What I have done is recited in report. Population estimated 8000. A sewer system incomplete. Water supply from river furnished to reservoir; said to be of fair quality.

Very respectfully

WM. E. JOHNSON

*Secretary State Department of Health*

ALBANY, N. Y., *September* 24, 1901

CHARLES E. BIRCH, M. D., *Health Officer, White Plains, N. Y.:*

Dear Sir—In view of a report made to this Department in August last by Dr. W. E. Johnson, you are requested to inform me whether any action has been taken by your board looking to

the abandonment of outside privy vaults at the East View avenue school, and the connection of the water closets with the sewers of the village, as Dr. Johnson stated that the closets were already constructed; also that a trunk line sewer was to be built through East View avenue.

Yours truly
CHAS. E. BIRCH
*Commissioner of Health*

WHITE PLAINS, N. Y., *September* 27, 1901

DANIEL LEWIS, M. D., *Commissioner of Health:*

Dear Sir—Our board of health has taken no further action in reference to the East View avenue school or sewer.

The board of trustees of the village has given a contractor the contract to put a sewer through East View avenue, and he is now at work constructing the same.

Yours truly
CHAS. E. BIRCH
*Health officer*

## HERKIMER

### Public school

ALBANY, N. Y., *November* 7, 1901

DANIEL LEWIS, *State Commissioner of Health:*

Dear Sir—In regard to the sanitary condition of the school house at Herkimer, which the superintendent of public instruction requested this Department to investigate, I find the following criticisms to make:

The building consists of a main part built some 25 years ago, with a more recent addition. It is a well-built edifice of brick, attractive in appearance, with extensive grounds to the front and either side. It accommodates 658 pupils and is, I think, overcrowded, but I have not taken exact measurements

of internal area. It is heated with hot-air furnaces in the basement, which take fresh air from the outside. It is to some extent artificially ventilated by chimney shafts having connection to each room, drafts being secured by a special fire at the base.

The classrooms are lighted properly, seats being arranged with windows to the left and rear with blackboards on the front and right walls, the same being colored dark green, which seems a very commendable substitute for black. The walls are in good condition, but in the older part the floors are not good by reason of unnecessarily wide cracks between the strips of flooring.

The water-closets and urinals are in the basement. Those for the children are iron troughs containing water and automatically flushed. This is a good system, but the style is not the best nor are they in the best condition. The system is not good for boys as they are not likely to be used, and in fact are not, with care. It would be better to substitute upright urinals with flowing water to wash the sides and a ventilating central post. The present style could have pipes added to wash the sides constantly, but the entire casing and the outer surfaces cannot be washed by them.

The floors, which are all of concrete, in one of the apartments are broken, and besides have no proper slope; they should be mended by making the surface smooth and laid so as to be readily washed out. These floors are not kept as clean as they should be. They should likewise be better ventilated to the outer air, at least temporarily by revolving disks in the windows. They should be more perfectly shut off from the floors above by two doors closing with a spring, for the air can now go upstairs readily.

There is no plumbing above the basement save for taps in the halls, on two floors, for drinking purposes. The plumbing is all said to be trapped, but it is so built in that I cannot verify this.

The rear of the building abuts directly upon an extensive stable yard of a hotel for its entire length. This is not desirable and has been a source of nuisance from the odors reaching

schoolrooms. At present there are only some fowls kept in the yard, but there have been pigs and manure accumulations which are now removed and the premises are in fair condition. If allowed to be used to the extent it is for poultry only, it may be kept in a fair sanitary condition, though certainly not as desirable near the school as a grass plat would be.

There has been an outbreak of diphtheria in the village, chiefly affecting children who occupied one room of this school. It was not, however, due to the sanitary conditions of this room, which is a large one on the top floor quite remote from any contact with the conditions criticised, and I think not overcrowded as at present used, having been first planned for an assembly room and now used for a study hall. We should never lose sight of the fact that diphtheria is primarily a contagious disease, communicated by either one sick with it, possibly but mildly, or by one who has the germs of infection about the clothing or person from contact with one sick with the disease. There is every probability that such was the origin of the disease. It would be a wise precaution to destroy any germs that may have been brought into this room in this way by fumigation and cleaning, then if care is taken to prevent any one from bringing fresh infected material the use of the room will be entirely safe.

The principal told me that there was little complaint of illness such as would come from foul air among the scholars. The school has been closed on account of fear of the people of this diphtheria outbreak, and I did not see the classrooms occupied, but as I saw them after being empty for a time the air of the rooms was wholesome.

I would recommend the changes suggested about the closets and urinals—that they be shut off more completely from the rest of the building and be better ventilated; that assurance be secured of proper plumbing; that these afterward be kept more cleanly, and that the hotel yard be kept in a sanitary condition.

Very respectfully

F. C. CURTIS

ALBANY, N. Y., *November* 8, 1901

Hon. CHARLES R. SKINNER, *Superintendent of Public Instruction Albany, N. Y.:*

Dear Sir—In compliance with your verbal request, Dr. F. C Curtis of this Department inspected the public school building in the village of Herkimer, and I submit herewith for your information a copy of his report.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

ALBANY, N. Y., *November* 8, 1901

CYRUS KAY, JR., M. D., *Health Officer, Herkimer, N. Y.:*

Dear Sir—I enclose herewith for your information copy of a report made by Dr. F. C. Curtis upon his examination of one of the public schools in the village of Herkimer.

A copy of the report has also been sent to the board of education.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

ALBANY, N. Y., *November* 8, 1901

*The Board of Education of Herkimer, care A. B. Steele, Herkimer, N. Y.:*

Gentlemen—For your information I enclose herewith copy of a report made by Dr. F. C. Curtis, medical expert of this Department, upon his investigation as to the alleged unsanitary condition of one of the public schools of your village.

It is advised that the suggestions of Dr. Curtis for the betterment of the school building be carried out by your board.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

# CHERRY VALLEY

## Tekaharawa creamery

*Superintendent State Board Health, Albany, N. Y.:*

Esteemed Sir—In this corporation there is a creek which runs directly under my house and into which the sewage of Tekaharawa creamery (consisting of milk, whey, acid and one water-closet) is deposited daily, which I consider detrimental to the health of myself and family. I have appealed to our local board of health and they pay no attention to the matter. I suppose they do not want to interfere with the creamery, at least it looks that way. The bottom of said creek is all covered with slime and smells very bad. If you will send an inspector out here I will show him all about it. There must be something done as I am afraid of fever or some other disease arising from it. Please advise.

I am sir,

Yours very respectfully

FRANK WINNE

P. S.—Please have your inspector come out here on afternoon train so as to be here in the morning at about 7 o'clock, as then is when the sewage is coming down the creek. Have him stop at the Winne house near the depot and the proprietor, Mr. Schwinler will tell him where I live, which is next door.

F. WINNE

SCHENECTADY, N. Y., *August* 21, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—Agreeably to your instructions of July 22d I beg to submit the following report of my investigation of the complaint of the pollution of a stream at Cherry Valley by refuse from a creamery in that village:

I visited the place on August 3d and found the stream to be a small one discharging not more than one or two cubic feet per second at ordinary stage, flowing past the creamery and

through the village, passing under houses and barns and in close proximity to others. Above the junction with the creamery drain the stream is very clear and the bed and banks clean and either gravelly or grassy. Below the junction the bed and banks are lined with rank growths of various species of aquatic life, which in turn are coated with slimy coverings varying in color from a light pinkish drab just below the creamery pipe to black or greenish black a mile below. At all points below the pipe from creamery the stream is offensive and disgusting in appearance.

While there are numerous other sources of pollution along the bed of the stream, such as stables, manure piles and garbage thrown into the stream, it is my opinion that the matter discharged from the creamery is responsible for the larger part of the visible pollution and that which causes the worst of the odors complained of. An examination at the creamery showed that the establishment is owned by the Rockdale creamery company, unincorporated, with David Lewis, No. 179 Chambers street, New York, as president, John H. Curtis, Rockdale, N. Y., as manager, and the above two gentlemen, with Mr. D. Ward Lewis, No. 179 Chambers street, New York, as the sole partners. The creamery handles about 20,000 pounds of milk per day during the summer season, separates it all for butter, sours the separated milk for casein, and pumps the whey over to the adjoining milk-sugar factory of the Wells, Richardson company of Burlington, Vt., where the whey has its sugar of milk extracted. The only refuse therefore entering the creek from the creamery at the time of my inspection was the washings of the creamery and the washings of the curd, in which acid is also used. This relatively small amount of milk refuse is responsible for the conditions stated only on account of the smallness of the stream into which it flows. I did not discover that any pollution occurred from the milk-sugar factory, though a drain from that establishment was running into the same stream and carried a large amount of clear water used in the process of manufacture.

I was informed by the clerk of the village board of health that a notice had been served on the creamery company last season to discontinue the discharge of refuse into the creek, but that the only result from this order, which the local board of health took no further steps to enforce, was the closing of a water-closet in the factory during this summer. The clerk of the board of health also stated that the creamery company had stated to him that the company would do whatever the board of health directed it to do with its creamery waste as a substitute for discharging it into the stream, but as the board had, very properly, declined to specify what substitution the creamery company should adopt, no change had been made and the pollution continued.

The members of the board of health were very willing, after their duty was explained to them, to issue and enforce an order to abate the pollution from the creamery, but desired that the State Department of Health should first direct the local board of health to do so.

As a result of the above examination I beg to recommend:

1 That you direct the president of the board of health of the village of Cherry Valley to convene the board and issue and enforce an order to the Rockdale creamery company to discontinue the discharge of creamery refuse or washings from its Cherry Valley creamery into the stream running through the village of Cherry Valley, unless in your opinion the following step should *first* be taken:

2 That you notify the said creamery company of the conditions existing at the Cherry Valley creamery, either by furnishing the company a copy of this report or otherwise, and explain to them that neither the State Department nor the local board of health has authority to specify the form of remedy or substitute for the existing unsanitary conditions caused by their creamery, and to give the company a reasonable length of time within which to provide a substitute for and to discontinue thenceforth the discharge of all creamery waste and washings into the said stream. If this last recommendation when

adopted should fail to secure the desired action by the creamery company then the first should be taken.

The names of the members of the village board of health are: President, Lyman Thompson; clerks, Chas. W. Drane, Edwin Judd; health officer, Dr. N. D. Yates.

Yours very truly

OLIN H. LANDRETH

*Consulting engineer*

ALBANY, N. Y., *August* 24, 1901

DAVID LEWIS, *President Rockdale Creamery Company*, 179 *Chambers street, New York City, N. Y.:*

Dear Sir—Complaint having been made to this Department of the pollution of a stream of water in Cherry Valley by refuse from a creamery in that village, one of the consulting engineers of the Department was directed to investigate the complaint, the report being as follows:

"ENGINEERING SCHOOL OF UNION COLLEGE

"SCHENECTADY, N. Y., *August* 21, 1901

"DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

"Dear Sir—Agreeably to your instructions of July 22d I beg to submit the following report of my investigation of the complaint of the pollution of a stream at Cherry Valley by refuse from a creamery in that village. I visited the place on August 3d and found the stream to be a small one discharging not more than one or two cubic feet per second at ordinary stage, flowing past the creamery and through the village, passing under houses and barns and in close proximity to others. Above the junction with the creamery drain the stream is very clear and the bed and banks clean and either gravelly or grassy. Below the junction the bed and banks are lined with rank growths of various species of aquatic life, which in turn are coated with slimy coverings varying in color from a light pinkish drab just

below the creamery pipe to black or greenish black a mile below. At all points below the pipe from creamery the stream is offensive and disgusting in appearance.

"While there are numerous other sources of pollution along the bed of the stream, such as stables, manure piles, and garbage thrown into the stream, it is my opinion that the matter discharged from the creamery is responsible for the larger part of the visible pollution and that which causes the worst of the odors complained of. An examination at the creamery showed that the establishment is owned by the Rockdale creamery company, unincorporated, with David Lewis, No. 179 Chambers street, New York, as president, John H. Curtis, Rockdale, N. Y., as manager, and the above two gentlemen with Mr. D. Ward Lewis, No. 179 Chambers street, New York, as the sole partners. The creamery handles about 20,000 pounds of milk per day during the summer season, separates it all for butter, sours the separated milk for casein, and pumps the whey over to the adjoining milk-sugar factory of the Wells, Richardson company of Burlington, Vt., where the whey has its sugar of milk extracted. The only refuse therefore entering the creek from the creamery at the time of my inspection was the washings of the creamery and the washings of the curd in which acid is also used. This relatively small amount of milk refuse is responsible for the conditions stated only on account of the smallness of the stream into which it flows. I did not discover that any pollution occurred from the milk-sugar factory, though a drain from that establishment was running into the same stream and carried a large amount of clear water used in the process of manufacture.

"I was informed by the clerk of the village board of health that a notice had been served on the creamery company last season to discontinue the discharge of refuse into the creek but that the only result from this order, which the local board of health took no further steps to enforce, was the closing of a water-closet in the factory during this summer. The clerk of the board of health also stated that the creamery company had

stated to him that the company would do whatever the board of health directed it to do with its creamery waste as a substitute for discharging it into the stream, but as the board had, very properly, declined to specify what substitute the creamery company should adopt, no change had been made and the pollution continued.

"Yours very truly

"OLIN H. LANDRETH

"*Consulting engineer*"

As it is shown by the report of Professor Landreth that a nuisance is being caused by the Rockdale creamery company at Cherry Valley, N. Y., you are directed to cause to be discontinued at once the discharge of creamery refuse or washings into the stream running through the village of Cherry Valley, and to provide within 30 days from this date a sanitary means of caring for the refuse or washings from your creamery. It is not the province of this Department nor that of the local board of health to specify in what manner a nuisance shall be abated, it being the duty of the maintainer of the nuisance to determine upon some sanitary method of abating the nuisance.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

ALBANY, N. Y., *September* 11, 1901

N. W. THOMPSON, *President Board of Health, Cherry Valley, N. Y.:*

Dear Sir—In view of the report made by Prof. Olin H. Landreth upon his recent investigation of a complaint made by Mr. Frank Winnie concerning the alleged unsanitary condition of a creek running through the village of Cherry Valley, it is advised that your board cause the bed of the creek to be cleared of all refuse matter and obstructions, that there may be a free flow of water at all times; cesspools within 100 feet of the stream should be made water-tight, and their contents removed at such times and under such conditions as in the judgment of the local board are necessary.

It is not the intention of this Department to unnecessarily interfere with industries such as the Rockdale creamery company and it would appear safe for you to permit the discharge of wash water from the creamery, also the sugar plant, into the creek, provided it is done under the general supervision of your board that you may be in a position to know that the privilege is not abused.

In the course of two or three weeks it would be well for you to advise this Department as to whether or not the stream shows evidence of continued pollution, and if deemed necessary a further investigation will be made.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

ALBANY, N. Y., *August* 24, 1901

N. F. YATES, M. D., *Health Officer, Cherry Valley, N. Y.:*

Dear Sir—I enclose herewith, copy of a letter addressed to Mr. David Lewis, president Rockdale creamery company, directing him to cause the abatement of a nuisance found to be caused by the discharge of refuse and washings from the creamery into a stream running through the village of Cherry Valley.

You are requested to keep this Department advised of such action as may be taken by the company, as its failure to comply with our instructions will necessitate the convening of the local board that it may issue and enforce an order requiring the abatement of the nuisance.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

## LEXINGTON CREAMERY

LEXINGTON, N. Y., *July* 1, 1901

*To the State Board of Health, Albany, N. Y.:*

Gentlemen—The Lexington creamery company runs all the slops from the creamery into a pond on a flat back of the

creamery. The water in the pond is so low that it doesn't run out. The creamery makes curd and they use acid to curd the milk, and they run the whey in the pond. There is fish in the pond and they are all dying off. The creamery company is digging a cesspool to run their slops in, but what is in the pond will have to remain there all summer if there is not something done about it. It smells so a person can hardly stand it to go near the pond. My house is about one-quarter of a mile from the pond, and it smells so when the west wind blows we have to shut the windows and doors. This pond can be drained in the creek if the board of health here will attend to it. They have been notified, but they don't amount to anything. If they did they would have the pond drained or do something with it. If any of them lived near the pond they would attend to it at once. One of the board has looked at it and said it was terrible and a shame to have such a nuisance.

Please let me hear from you in regard to it and what to do about it and oblige,

W. M. ORR

LEXINGTON, N. Y., *July* 26, 1901

*To the State Board of Health, Albany, N. Y.:*

Gentlemen—In reference to pond here complained of to your honorable board by W. M. Orr and others, I wish to state that all drainage from the Lexington co-operative creamery has been shut out of said pond for fully two weeks, and is now run into a large cesspool. The pond referred to is about 80 feet long and 15 to 20 feet wide and 4 to 5 feet deep. It has always been stagnant in summer, and it is said by some to be much worse this season than heretofore, while others claim it is no worse. The pond is and always has been a nuisance—for years before our creamery was built. While we do not feel that we are the cause of the pond being a nuisance, we are willing to do anything within reason to stop the smell complained of and would be pleased to receive some suggestions from your honorable

ard. If you can suggest any sort of a disinfectant that could thrown into the water, as that seems to be the only feasible y of doing away with the smell.

Yours truly

GEO. B. VAN VALKENBURGH

*Secretary-Treasurer Co-operative Creamery Association (Ltd.).*

ENGINEERING SCHOOL OF UNION COLLEGE

SCHENECTADY, N. Y., *August* 23, 1901

NIEL LEWIS, *Commissioner of Health, Albany, N. Y.:*

Dear Sir—I beg to report that agreeably to your instructions July 22d I visited the village of Lexington, Greene county, on gust 7th for the purpose of investigating a complaint con- rning an alleged pollution of a pond by refuse from a creamery that village.

The pond in question is a long narrow depression, originally e channel of the Schoharie creek, but now disconnected from e creek by closing up of the portions of the channel above and low the pond. It is from two to four feet in depth, and the t meadow in which the pond is situated is overflowed nearly ery spring by high water in the creek, at which times there is me current through the pond from the flood-waters of the eek. The pond is near but not on the land of the creamery, to which, however, the creamery refuse has been drained for e past two years, but until this summer the creamery did not ake casein and hence returned all its separated milk to the ntributing farmers. The offensive conditions are therefore ly complained of as existing this summer. On July 25th the ard of health of the town of Lexington, in which township th the creamery and the pond are situated, declared the pond th the refuse in it and entering it to be a public nuisance and dered the creamery company to abate the same. Thereupon soon after the creamery company constructed and adopted er means of disposing of its whey, which during the early rt of the summer had been discharged into the pond, or at

least all except the relatively small part which farmers took back with them, but the creamery company did not reclaim the pond to its original and natural condition but left it with the accumulation of refuse still in it.

The conditions in and around the pond are bad and give rise to very disagreeable and sickening odors, which are made somewhat worse no doubt by the washings from one or two privies and a stable very near to a small stream which runs into the pond after rains. As there is no regular outlet from the pond the milk-sugar and curd accumulated there will doubtless be a long time in disappearing, and the unsanitary conditions and bad odors will continue until these materials do disappear.

I informally and unofficially advised both the health officer and the secretary and treasurer of the creamery company that in my opinion the abatement had not been completed by the discontinuance of the discharge of refuse into the pond, but should include also the removal of the accumulations of creamery refuse and the restoring of the pond to its former sanitary condition. In discussing with representatives of both the board of health and the creamery company the best means to restore the pond to its usual condition, two plans were considered: One was to temporarily drain out the waters of the pond by an open ditch, which should then be refilled in order that the freshets might not cut channels through the meadow. The second plan was to drain the pond by a tile drain of glazed sewer pipe and to maintain the drain and thus secure a permanent removal of the pond, or at least its reduction to a small size. As the latter plan would not only abate the creamery nuisance but would produce a permanent sanitary improvement (for it was stated that the water of the pond usually became stagnant in summer) it appeared to be the better plan to carry out if it seemed feasible to accomplish it. With this end in view the local board of health proposed to the creamery people to stand one-half of the expense of the permanent drainage of the pond, and I advised the creamery people to accept the proposition, and it was arranged when I left that a meeting of the creamery directors

ld be called for August 10th to consider and act on the osition of the board of health. As a means of carrying out mprovement if agreed to, I suggested that as the pond ex- ed across the property of three different owners the creamery le would have no right to carry out the measure without the al consent of all parties interested, but that the local d of health could do this without consent provided it made any damage caused the owners. As the three owners had d that they would give this consent, I advised that the d of health procure these consents in due form, including a se from any claims for damages arising from the draining e pond, purchase material and employ labor and carry out permanent improvement and assess one-half the cost on the mery company in accordance with their agreement to meet half the cost. I advised the board of health that as the harge of acid or other matter injurious to fish was in viola- of the fisheries law, the drainage of the accumulated pond er containing acid by either plan should be done very gradu- , allowing the water to run off very slowly in order to secure tion with a large amount of creek water.

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

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## HOBART

### Creameries

SCHENECTADY, N. Y., *August* 24, 1901

IEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

ear Sir—I beg to report that agreeably to your instructions July 22d I visited the village of Hobart on August 2d for purpose of examining into an alleged pollution of the Dela- e river, West branch, by two creameries in that village.

The Delaware river at this point is a small stream whose flow through the village is rendered slack by the effect of two mill dams in the village.

The two creameries are: The Hobart dairy condensing company, limited, and the Halsey creamery company. Both creameries have been discharging their refuse into the river for some time, but on notice to discontinue this discharge sent to both creameries earlier in the season by the village board of health, the Halsey company was said to have discontinued the discharge, though my examination showed that the creamery was still discharging into the creek though apparently in less quantities than the full output of refuse. The discharge from the condensing company, however, had not been reduced, except that a small amount had been hauled away in wagons carrying cans and thrown on a meadow, where it was killing the grass as no effort had apparently been made to sprinkle or spread it on the land.

The condensing company handles from 20,000 to 25,000 pounds of milk per day during the milk season, disposed of as follows:

8000 to 10,000 pounds used for butter and buttermilk.

8000 to 10,000 pounds used for cream, casein and whey.

The balance used as milk for shipping away.

The whey from the above, the washings from the creamery operations, and it is said by outside parties that large amounts of milk are at times discharged into the river from this creamery. At the time of my visit a recent rain had pretty thoroughly flushed out the ponds so far as floating matter is concerned, but the whole of the water in both ponds was milky and sour and the banks and bed were coated with large accumulations of curd and other decomposing matter, principally curd.

The numerous complaints were all apparently instigated by an unusually bad condition of the stream due to one of the ponds having been drawn down and the banks and bed exposed, giving off exceedingly offensive odors which caused great annoyance to residents living even long distances from the river. There is no question but that the existing conditions even at

time of my visit were unsanitary and constituted a menace
:he health of the adjacent community, and that they consti-
: a public nuisance and should be peremptorily abated.
he local board of health has issued a number of "notices"
he two creameries, but has taken no further steps to enforce
dience to such orders and appeared to be lacking in courage
lo so. I explained to the president of the board and to the
lth officer that since you had on June 28th directed the local
rd to remedy the unsanitary conditions, under section 25 of
Public health law, no discretion remained to the board, pro-
:d they found the conditions unsanitary which the board had
leclared, but to enforce the orders given by their board under
authority provided under sections 26, 27, and if finally neces-
r, 31. The president of the local board and the health officer
ıred me that the board would meet on August 3d and would
e steps to enforce its orders against the creameries and
ıld report to you promptly just what action should be taken.
would suggest that, unless reports have been received show-
satisfactory progress by the local board of health or are
n received, you take up the matter and see that the
rd performs its duty in effectually abating the unsanitary
ditions.

Very truly yours
OLIN H. LANDRETH
*Consulting engineer*

HOBART, N. Y., *August* 24, 1901

*the State Department of Health:*

'ear Sirs—Mr. Landreth was here the first of the month and
l me what notice to serve on the creameries, and requested
t I write to let you know what action they took. I think
t they are keeping nearly all of the milk and curd out of
river, but they still continue to run the wash water in the
r and expect they will run the whole thing in again when it
es winter and freezes up. That is the way they have done

in the past when a complaint has been made in the summer. I would like to ask if there is any way that they can be made to take up their drain that runs from their creamery into the river.

Yours respectfully
D. BURROUGHS
*President Board of Health*

ALBANY, N. Y., *August* 26, 1901

D. BURROUGHS, *President Board of Health, Hobart, N. Y.:*

Dear Sir—I am in receipt of your communication of the 24th instant in the matter of the abatement of nuisances caused by creameries at Hobart, and note your statement as follows: "I think that they are keeping nearly all of the milk and curd out of the river, but they still continue to run the wash water in the river and expect they will run the whole thing in again when it comes winter and freezes up."

In reply you are informed that there should be no question as to the abatement of the nuisance as it now exists, and enforcement of compliance on the part of the creamery authorities with the orders of the local board of health prohibiting the discharge of any refuse or waste from the creameries into the river, as this Department will insist upon the permanent abatement of the nuisance. You are therefore advised to require strict compliance with your orders on the part of the creameries.

While you cannot require the parties to take up the drain you refer to, you can compel a discontinuance of its use for the discharge of polluting waste and refuse into the stream.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

# VILLAGE OF TUXEDO

ALBANY, N. Y., *May* 18, 1901

Hon. C. W. ADAMS, *Consulting Engineer State Department of Health, Utica, N. Y.:*

Dear Sir—The following communication was received from Dr. Edward C. Rushmore, health officer at Tuxedo, N. Y.:

"The local board of health at Tuxedo is desirous of carrying out some sanitary reforms about which there is some question as to its power to legally enforce.

"The community is, however, a reasonable one when arguments are presented backed by acknowledged expert authority.

"Will it be possible for a representative from the State Department to come here and make a report as to the existing sanitary conditions, together with recommendations for the abatement of any nuisances that may be found to exist?"

Dr. Rushmore was informed that one of the sanitary engineers of the Department would be detailed for the duty at the expense of the municipality of Tuxedo, the charge to be $15 per day and expenses, to which he has assented.

You are requested to visit Tuxedo for the purpose indicated in Dr. Rushmore's request, and upon the completion of your investigation furnish this Department with a copy of your report.

Please communicate with the health officer at your earliest convenience, informing him when you will be able to make the investigation.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

UTICA, N. Y., *May* 25, 1901

EDWARD C. RUSHMORE, *Health Officer, Tuxedo, N. Y.:*

On May 19th I received from Daniel Lewis, State health commissioner, instructions to proceed to Tuxedo and make an

examination of the existing sanitary conditions and report to the Tuxedo health board the results of such examination, together with such recommendations as might suggest themselves to me looking toward the abatement of any nuisances should any be found.

On the 23d of May, with Superintendent Patterson of the Tuxedo park association, and later with Dr. Rushmore, health officer, we inspected the grounds of the association, Tuxedo village, and the new "east village," observing especially the arrangements for taking care of the stable wastes and the sewage disposal works. The map of Tuxedo park shows that Tuxedo lake and the lesser lakes on its outlet are controlling features of the topography. The drives and roads and the allotment of the park keep the lakes in view. Most of the slopes of the park occupied by the residences of the members send their surface drainage into the lakes.

### THE CARE OF LIQUID WASTES

I am informed that all buildings within the park are provided with sewers. An examination of several manholes showed an excellent method of caring for the liquid wastes of both houses and stables—from the houses by the usual and modern water-closets and from the stables by an arrangement of drains from the slatted floors of the stalls, discharging into a leeching basin and thence into the sewer main in the roadway. In some instances a number of stables drain into a common outlet and thence to a leeching basin. On opening a sealed cover of one of these leeching basins I could detect no odors, and saw an ample supply of water passing through. The sewers from all the buildings are finally merged into a ten-inch outlet discharging through the disposal works into the Tuxedo lake outlet and thence into the Ramapo river.

The sewage disposal works consist of a septic tank of brick masonry with vaulted roof and of a capacity of about 80,000 gallons, the measured sewage discharge of 24 hours according to Dr. Rushmore. Adjacent to the septic tank, with brick vaulted roof, is a larger tank of brick masonry, with wood flat roof only. This tank

is a further settling tank for the sewage before discharging it on to the filter beds. These latter, as they have been used up to the present time, are in four beds, together about 5000 square feet area. They are all in use at the same time, not intermittently. Adjoining these filter beds are four more of equal area with the old ones, but which are not yet finished for use.

I saw samples of the effluent taken on May 21st and 22d. The water was cloudy and contained much "floxy" matter, indicating that the voids in the filtering material are too big. It is of coke in rather coarsely broken chunks. The new filter beds are to be filled with screened gravel instead of coke. The effluent discharges into the outlet of the lake, and I saw no evidences of old pollution of its bed and banks.

As a statement of fact, however, the stream was carrying the entire discharge of raw sewage on the day of my inspection, the outlet being so arranged that in case of repairs no sewage is turned into the tanks but directly into the stream. If practiced often the results would soon become evident, and not in a way conducive to the good name of the management.

The repairs now in progress, together with the new filtering beds, will provide really a dual system of septic tanks and filtering beds, and hence will permit of repairs to a tank or a bed, and while it or they are out of use the other half will do the work.

### THE CARE OF SOLID WASTES

I was informed by Superintendent Patterson that the kitchen wastes and household garbage—kept more or less separate from ashes and rubbish—are removed by contract, by house to house collection of the contents of the garbage receptacles, and removed to nearby farms for hog food.

In a community like Tuxedo park a residence means also an accompanying stable, and hence the horse population is a large one. The disposal of the liquid wastes from the stable I have described, and they are well designed means to accomplish their purpose; the provisions for the care and disposal of the stable manure are these:

Each private stable, and I saw no exceptions, is provided with a receptacle for the manure, which in most cases is covered by a roof or is in the basement of the stable. Those I saw were of water-tight construction. I am told that the manure is removed periodically and by the superintendent's forces, so that responsibility for any neglect of such removal lies with him whether the case be a private stable or the association's stable.

The house fly breeds in accumulations of stable manure. He is synonymous with filth and carries it and any germs of disease it may contain on his feet from place to place.

In time he will be recognized as the disgusting and dangerous nuisance that he is. The high standard of cleanliness adopted and followed by the Tuxedo association in the matter of caring for the human wastes is maintained in the matter of the stable manure not in all cases of private stables, but particularly at the stables of the association, is there plain neglect. I am informed by Mr. Griswold that receptacles for the public stables are to be built in a proper manner and the accumulations now there, removed. Another feature observed at the association's stables was the apparent winter's accumulations of straw and droppings on a small circular exercising track near the stables and also near the middle lake shore. The rain could soak through these piles and carry anything they contained into the lake.

### FERTILIZING THE LAWNS

In connection with each residence and in many public places there are well-kept lawns. While on none of them was any fertilizing material to be seen, yet it is probable that much of the stable manure is used on these lawns. If this be true, then the water supply of the people of Tuxedo would receive the washings from these lawns. The thought is obnoxious to the fine sentiment which prompts the expenditure of a lot of money to cause the removal of all sewage from the houses and stables to a distant point so as not to contaminate the water supply. Green stable manure, or even if partially decomposed, should not be spread on the surfaces which drain into the lakes, as Tuxedo lake is the

source from which is pumped the potable water supply for the park, while the lower lake is the source of a gravity supply for Tuxedo village. Presumably the owners or occupants of the individual homes in the park would desist from such practice upon notice to do so by the superintendent, and of course he would not permit it on the public places or slopes if the association so directed. But if there be any such owners who are careless, or who may even consider such precautions as silly and refuse to abide by the superintendent's orders, then the matter can be effectually covered by a rule or regulation of the State Department of Health as provided by the Public health law in relation to the protection of a public potable water supply.

CONCLUSIONS

An examination of the sanitary arrangements at Tuxedo park reveals these facts:

*First*—The topography of the park permits the design and construction of a good system of sanitary measures for the collection and disposal of the household and other wastes.

*Second*—The sanitary measures adopted or employed are of a high order of merit and indicate a standard that will only be satisfied when nothing is left undone which tends toward complete protection from the ills that follow unsanitary conditions.

As means toward that end I would suggest these recommendations:

*First*—Since Tuxedo lake is the source of water supply for the residences of the park and the lower lakes the source for the people in the village, then keep the slopes which drain into the lakes as free as possible from anything that would or might contaminate. Stable manure spread on the grass plots or lawns is one such thing. It can be effectively stopped by a request from the association or the local board of health to the State Commissioner of Health, asking that a rule be made by the State Commissioner as provided by section 70, article 5, of the Public health law, which will forbid such practice. The lawns may be fertlized by commercial preparations which are not harmful in themselves.

*Second*—Also a rule that will require the placing of stable manure in covered receptacles, with water-tight floor or bottom, and shall require the removal of their contents at frequent intervals.

*Third*—Request the association to complete the alterations now underway at the sewage disposal works by provisions for controlling the inflow and outflow so that half the works could be in use while repairs were being made to the other half, and at no time turn the raw sewage into the brook.

*Fourth*—Request the association to build a system of sewers with purification works on the septic tank principle for Tuxedo village.

The watershed of Tuxedo lake is forest covered and almost unsettled. There is, however, a small settlement about two miles south of the lake. It is named on the map Eagle Valley. There may be other isolated residences on the shed, so that if a request be made to the State Commissioner of Health to make rules governing a portion of the watershed of Tuxedo's water supply, it would be no more trouble nor expense to have the rules general in their application and cover all kinds of possible pollution, and I so advise.

Respectfully submitted.

CAMPBELL W. ADAMS
*Consulting engineer*

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# ALBION HOUSE OF REFUGE FOR WOMEN

## Sewage disposal works

ALBION, N. Y., *October* 17, 1901

*To the State Board of Health, Albany, N. Y.:*

Gentlemen—The attention of your Board is hereby called to the condition of the sewer plant on the grounds of the state *connected* with the House of refuge, situated in the town of *Albion, Orleans* county.

Complaint having been made to me of the stench arising from said plant during the past few days of warm weather, upon investigation I have found the complaint well founded as the odors have been very disagreeable. Whether noxious or not I am unable to state.

Respectfully
JNO. E. SUTTON
*Health officer*

ALBION, N. Y., *October* 29, 1901

*To the State Board of Health, Albany, N. Y.:*

Dear Sirs—I understand from Dr. John E. Sutton, health officer of the town of Albion, that he has called your attention to the sewage disposal system of the Western New York house of refuge for women at Albion, and has advised you that something should be done to abate the nuisance which this system is daily causing in its vicinity. The odors arising from it are such that the houses in the immediate neighborhood must be kept tightly closed all the time or the inhabitants would be obliged to move out. I have been retained by several of these people to see what can be done in the matter, and write to ask that you take immediate steps to abate the nuisance. I shall be forced otherwise to see if an injunction cannot be obtained restraining the use of the sewerage system.

Hoping you will give the matter your immediate attention, I remain

Yours very truly
SANFORD T. CHURCH

To the Hon. BENJAMIN B. ODELL, JR., *Governor of the State of New York:*

Sir—We the undersigned members of the town board of health of the town of Albion, Orleans county, New York, would most respectfully ask that your honor call the attention of the Commissioner of Public Health to the fact that there exists in said town of Albion a public nuisance which is a menace to the public health, and that you require said Commissioner to make

an examination, as provided in article 1, section 6, of the Public health law of the state of New York, of the facts and evidence hereto attached.

On the 26th day of November, 1901, at a special meeting of the town board of health of the town of Albion, a petition as provided in article 2, section 21, of the Public health law of said state, was presented, signed by 37 residents and taxpayers of the said town, of which the following is a copy:

We, the undersigned inhabitants and residents of the town of Albion, N. Y., hereby request the board of health of the town of Albion to abate a nuisance existing at and arising from the sewerage system of the Western New York house of refuge for women, as we believe that the stench arising from the same is detrimental to the health and safety of those who reside within a radius of half a mile, and also of the general public who are compelled to use the nearby streets.

That upon presenting the said petition such action was taken thereon; that H. C. Tucker, esq., one of the members of said board of health, was duly appointed for the purpose of issuing subpoenas and taking evidence relative to the matters set forth in said petition; that A. A. Sturges, esq., was duly appointed by said board for the examination of witnesses and preparation of the necessary papers thereof; that on the 5th, 10th, and 20th days of December, 1901, such examination was duly had in accordance with the action of said board, and a complete copy of the evidence taken on such examination is hereto attached and made a part hereof.

*Evidence taken on this 5th day of December, 1901, by and before H. C. Tucker, a member of the town board of health, duly appointed for the taking of evidence in matters pertaining to the public health.*

ROBERT EDGAR, being duly sworn, says:

"I am a resident of the town of Albion and also a taxpayer in said town, and know the location of the Western house of refuge in this town, and know the location of the sewerage system of said Western house of refuge, just west of the village

mits; have been by there within six months; I have a father nd uncle who live near there; there is a very bad smell there, very stinking smell; I was there about two weeks ago working r the electric light company, putting in a pole near there, and e smell was very bad; it was hard to stand it; I was probably 0 feet northeast of the sewerage system; William Wall, John cCarthey, and Louis Smith were present; I have smelt it at ing street, 100 rods away; this smell is preceptible at any me, but more in the summer than winter.

(Signed) "ROBERT EDGAR"

Taken on oath and subscribed before me this 5th day of ecember, 1901.

H. C. TUCKER, *Member of town board*

H. M. STROUSE, being duly sworn, says:

"I am a resident and taxpayer of the town of Albion and live n the western portion of the village of Albion; know the locaion of the sewerage system of the Western house of refuge; have perceived a noxious smell while sitting on Mr. Landauer's teps and he said it came from there; Landauer lives on State treet, about 300 rods or more east of the system; I have noticed he smell on more than one occasion; the smell was a very disgreeable smell; from what I know of it I would consider it a nauseous smell.

(Signed) "H. M. STROUSE"

Taken on oath and subscribed before me this 5th day of ecember, 1901.

H. C. TUCKER, *Member of town board*

GEORGE COLBURN, being duly sworn, says:

"I am a resident of the town of Albion, live on West Park treet; know there is a sewerage system at the Western house f refuge; have noticed a noxious smell or odor coming from it n several occasions, last was at Matthew Edgar's; there was strong smell; the smell would turn a man's stomach; from hat I know about it I would consider it a nuisance.

(Signed) "G. A. COLBURN"

Taken on oath and subscribed before me this 5th day of December, 1901.

H. C. TUCKER, *Member of town board*

F. C. BUTLER, being duly sworn, says:

"I am a resident of the town of Albion; live on West Park street, and know there is a sewerage system at the house of refuge; know there is a noxious odor coming from there; have noticed when there was a west wind; I have been near there on a number of occasions and have noticed a nauseous odor; from what I have observed I consider the smell a nuisance to the general health.

(Signed) "FRED BUTLER"

Taken on oath and subscribed before me this 5th day of December, 1901.

H. C. TUCKER, *Member of town board*

LOUIS BULL, being duly sworn, says:

"I am a resident of the town of Albion, live on West State street, 300 rods from the refuge; know of a sewerage system at the Western house of refuge; have been going by there on different occasions; the smell was sickening; from what I know of it I would consider the smell a nuisance, and would have a tendency to depreciate the value of property in that location and would be bad for the health.

(Signed) "LOUIS BULL"

Taken on oath before me this 5th day of December, 1901.

H. C. TUCKER, *Member of town board*

JAMES AIKIN, being duly sworn, says:

"Am a resident of the town of Albion, and am living on a farm located on the north side of the Erie canal and west of Main street, in village of Albion; am a milk dealer and keep a large number of cows and have a large number of customers; know there is a sewerage system at the Western house of refuge; there is a creek running through the farm I keep and this sewer empties into that creek; there is a stench arising from the sewer running into that creek, a nauseous smell; two years ago I had to fence the creek off so that my cattle could not drink of it; before that I noticed that the water looked dirty and began to smell and we went to see Mr. Dye about it and he said that it had a cesspool *and he did not* believe it arose from that; since the present sys-

complete a stench arises from the sewer running from
: passed near the filter and I have noticed a bad smell;
t I have perceived I should consider the present system
e.

(Signed) "JAMES AIKIN"

on oath and subscribed before me this 5th day of De-
901.

H. C. TUCKER, *Member of town board*

ı EDGAR, being duly sworn, says:

in the town of Albion and am the wife of Matthew
y residence is northeast of the refuge system about 18
s; have been living there ever since this sewerage sys-
put there; the smell is something terrible; the smell
:ing and has made me sick a number of times; could not
windows open on account of the stench coming from the
t is more noticeable during the summer season; I also
loors to keep the smell out.

(Signed) "MARTHA EDGAR"

on oath and subscribed before me this 10th day of De-
901.

H. C. TUCKER, *Member of town board*

COLBURN, being duly sworn, says:

e been up to Mrs. Edgar's during the summer several
e smell there is nauseating; it is liable to make one
e noticed that when I was in the house we had to close
ows and doors; it was said at the time that the stench
a the refuge sewer; this has occurred at different times;
ıve been by there on the highway I have noticed it.

(Signed) "MINNIE COLBURN"

on oath and subscribed before me this 10th day of De-
901.

H. C. TUCKER, *Member of town board*

M EGGLESTON, being duly sworn, says:

resident of the town of Albion and know the location
werage system of the house of refuge; have perceived
; odor coming from this system; have lived north from
· about 300 *rods* several years; have noticed a stench

while living there; it was a good, rich smell; leading from t refuge the sewer empties into a culvert and flows through t culvert under the canal about 1200 feet from the wells of t water works company; the wells are driven wells; the pla where I lived was the pumping station of the water works; was the engineer.

(Signed) "WILLIAM EGGLESTON"

Taken on oath and subscribed before me this 10th day of D cember, 1901.

H. C. TUCKER, *Member of town board*

SANFORD T. CHURCH, being duly sworn, says:

"I am a resident of the village of Albion and know of t sewerage system of the Western house of refuge; I have bee there for the purpose of making an examination as attorney f Mr. Edgar; at that time I noticed a stench and also when ridin by there on the highway; the vat through which the sewer goe is located in the northeast corner of the grounds of the Wester house of refuge; it is not within the limits of the village b is located in the town of Albion; the edge of the vat does n exceed three rods from the north and south highway, and is 1 or 15 rods from another highway and within 10 rods fro Mr. Edgar's house; there is no chimney from the vat to carr off the stench; the stench is very disagreeable and I believe th smell at any time would be very nauseating; the sewer drains o across the canal.

(Signed) "SANFORD T. CHURCH"

Taken on oath and subscribed before me this 10th day of De cember, 1901.

H. C. TUCKER, *Member of town board*

M. R. HOWE, being duly sworn, says:

"I live in the village of Albion, live on King street, on th corner of State street; I have perceived a stench arising from th system on numerous occasions; it was very disagreeable; at m house it would be very rank sometimes.

(Signed) "M. R. HOWE"

Taken on oath and subscribed before me this 10th day of De cember, 1901.

H. C. TUCKER, *Member of town board*

MATTHEW EDGAR, being duly sworn, says:

"I live in the town of Albion; my residence is about 10 rods ›ortheast of the sewerage system of the Western house of refuge; ıave noticed a stench arising from the system nearly ever since he system was built; the drain of this system runs through ıy premises; I noticed no stench coming from there until this ɪstem was put in; I have been at home very often when we ave had to close the doors to keep the stench out; on occa-ons my girl has had to go away; when at home she is complain-g all the time, but is all right when away from home; since ıis system has been put in she has been sickly; my wife has ›en down in the garden and she was taken sick, vomiting to ıch an extent as to almost prostrate her.

(Signed) "MATTHEW EDGAR"

Taken on oath and subscribed before me this 10th day of De-›mber, 1901.

H. C. TUCKER, *Member of town board*

DAN BULLARD, being duly sworn, says:

"I live in the town of Albion; reside about one-quarter of a ıile northeast from the sewerage system of the Western house f refuge; I have noticed a smell when by there; it was a very ıad smell, a nauseating smell.

(Signed) "DAN BULLARD"

Taken on oath and subscribed before me this 10th day of De-ember, 1901.

H. C. TUCKER, *Member of town board*

MORGAN MCLEAN, being duly sworn, says:

"I live on West State street, in the village of Albion, about ne-quarter of a mile east of the sewerage system; have noticed stench arising from the system both at my house and when up y there on the highway; it was a nauseating smell; have ıoticed it so that we have talked it over at the time in the amily.

(Signed) "MORGAN MCLEAN"

Taken on oath and subscribed before me this 10th day of )ecember, 1901.

H. C. TUCKER, *Member of town board*

JOHN DUGAN, being duly sworn, testifies as follows:

"I am a practicing physician and surgeon of the town of Albion."

EUGENE CARRIER, being duly sworn, testifies as follows:

"I am a practicing physician and surgeon of the town of Albion."

F. R. NORTHON, being duly sworn, testifies as follows:

"I am a practicing physician and surgeon of the town of Albion."

S. R. COCHRANE, being duly sworn, testifies as follows:

"I am a practicing physician and surgeon of the town of Albion."

The following hypothetical question was asked of each of the above-named physicians, and they answered it in the affirmative, to wit:

"Q. Assuming that there is a sewerage system in the town of Albion touching the village of Albion on the west, and within about 10 rods northeast of said system, is a residence which is occupied by a family consisting of three persons, one of whom is a man who is not at home except nights and one a woman and another a young girl of about the age of 12 years; that there is a stench arising from the sewerage system which is very bad; that at times it has made the woman vomit and said family has been compelled to shut their doors and windows to keep out the the stench, and that the young girl before the system was built was healthy, and that after it was built she was sick at all times when she was at home, and that as soon as she leaves the place and goes away she is again well, and that the stench arising from said system is so bad that it has upon numerous occasions been noticed at a distance of from 200 to 300 rods from the main system; that there is a drain running from said system to the south bank of the Erie canal, a distance of about 80 rods, where it runs into a culvert running under the canal and then runs into the ground about 1200 feet from the water works company's pumping station, where there are a number of driven wells from which the residents of the village of Albion procure their water—what

do you say as to whether or not such a state of things is detrimental to the public health?

"A. It is."

And the following question was also asked:

"Q. And in your opinion, by reason of such a state of things, would you consider it a public nuisance?

"A. I would."

I hereby certify that the foregoing is a complete copy of the proceedings had and evidence taken before me.

H. C. TUCKER
*Member town board of health*

We earnestly request that some action be taken in this matter, and inasmuch as it is a nuisance existing on state property over which we have no control, we have deemed it our duty to present the same to your excellency that you may take such action as may to your excellency seem wise and just.

Dated December 31, 1901.

L. BURROWS,
*Supervisor*
E. H. WARNER
*Town clerk*
JNO. E. SUTTON
*Health officer*
A. A. STURGES
J. W. WRIGHT
M. H. BRONSON
H. C. TUCKER
GEO. W. PHIPPS

STATE OF NEW YORK—EXECUTIVE CHAMBER

ALBANY, N. Y., *January* 6, 1902

DANIEL LEWIS, *Health Commissioner, Albany, N. Y.:*

Dear Sir—I enclose herewith a statement from the town board of Albion, Orleans county, with affidavits attached, relative to an alleged nuisance arising from the sewerage system of

the Western New York house of refuge for women. I wish you would take this matter up with these people.

Very truly yours

B. B. ODELL, JR.

ALBANY, N. Y., *January* 8, 1902

Hon. BENJAMIN B. ODELL, JR., *Governor of the State of New York:*

Dear Sir—I beg to acknowledge the receipt of your communication concerning nuisance caused by the sewage disposal plant at the Albion house of refuge.

This Department has received complaints during the autumn which, when referred to the president and superintendent of the house, were pronounced unfounded by them.

The state architect has sent an engineer there, but his report is not conclusive.

I have arranged for a conference with Mr. Heins, Mr. Hill, who installed the plant, and my engineer, Professor Landreth, to be held here on Wednesday next. If a further inspection is necessary, it will be ordered and our decision will be forwarded to you as soon as possible.

My impression now is that the entire plan of sewage disposal there is faulty and will need entire reconstruction. Would it not be well for the Department of Health to have charge of sanitary work in all state institutions?

Yours respectfully

DANIEL LEWIS

*Commissioner of Health*

CLEVELAND, OHIO, *January* 18, 1902

Hon. G. L. HEINS, *State Architect, Albany, N. Y.:*

Dear Sir—On my way west I stopped in Albion and examined the sewage disposal plant at the refuge and the town clerk's records of complaints, affidavits, etc. I also conferred with Miss Curtin, the acting superintendent, Fred. Westcott, the man in charge of the works, Dr. Watson, the resident physician, Dr Sutton, health officer, Drs. Cochrane, Norton and Carrier, phy

sicians who were subpoenaed and whose affidavits were sent to the governor, and Dr. Caverly, the former health officer.

I took Dr. Carrier with me to inspect the plant. He never examined it before. We found it running well and turning out an effluent entirely inoffensive, though not quite so good as I have seen in warmer weather. A faint odor of fresh sewage was perceptible over the beds, much like dishwater with a dash of urine added. Standing over the blast vents in the aerators (the finishing filters) one could detect the earthy odor, like the smell of a greenhouse, indicative of satisfactory purification. No odor could be detected by either Dr. Carrier or myself at a distance of 30 feet from the beds. Dr. Carrier said that the existing odor was similar in character to that he had noticed from the road at other times, but much less in degree.

Miss Curtin said that she had noticed an odor at times in driving past the beds, and rarely at the buildings, but the staff and inmates were never especially annoyed by it.

Dr. Cochrane (see his affidavit) never examined the plant or the effluent, and had no knowledge as to the purification accomplished. He had simply noticed the odor in driving past; usually noticed it at night or in the early morning. He said it was very offensive and he believed it dangerous. If he had had *his* way, the plant would never have been accepted by the state.

Inquiry as to why he believed it "dangerous" developed the fact that he is not yet ready to accept the germ theory of disease.

Dr. Norton said that he had made no examination of either the plant or the effluent, but had simply noticed the odor in driving past, *usually at night.* He described the odor as "putrefactive."

Dr. Carrier volunteered the information that the young woman mentioned in his affidavit was not his patient. He added: "In taking an affidavit, you know, they ask you certain questions which they will let you answer in only one way. When you are through you feel like a liar."

Dr. Watson said that many of the statements in the affidavits were "gammon," that there "are 50 worse nuisances in the heart of the town," and that the only reasonable objectors were those who lived very close to the beds.

Dr. Caverly watched the construction of the plant very carefully, and shortly after its operation began he took away a bottle of effluent, which, when kept in a warm place, developed putrefactive tendencies. This dampened his hopes, and he has given the system no attention since. He has heard some complaints regarding odor, but none concerning the character of the effluent.

Immediately after leaving Dr. Sutton, the health officer, I wrote the enclosed summary of our conversation. The quotations may not be exact in sequence of words, etc., but the descriptive adjectives are literally those he used, and the precise significance of his words was carefully preserved.

None of the doctors knew of any illness in their judgment attributable to or influenced by the disposal plant, and none of them question its efficiency as a sewage-purifying apparatus.

Nearly all who have noticed the odors have stated that they are worse at night and in the early morning.

My own convictions are these:

1 That the Edgars probably have just cause for complaint, because of odors generated while the fan is not running.

2 That many of the complaints are purely imaginative or grossly exaggerated.

3 That the plant is performing well its primary function of turning foul sewage into clean water.

4 That the objectionable odors can be eliminated entirely without difficulty.

I believe that the operation of the fan for 24 hours each day, in accordance with the provisions of the original design, will remedy the trouble. This is the only material point wherein this plant differs from others working satisfactorily under the same system.

I am very loath to recommend any further action, yet I know rfectly well that the habit of criticism formed by the comainants will continue to assert itself, through the imagination in no other way, for some time before it perishes by atrophy. e regular operation of the fan alone will produce no *outward* d *visible* sign of change to appeal to the eye, and through it to e mind. It may be wise therefore to go a step further than actually necessary. If this step can be made to coincide withit detriment with the expressed opinion of some of the comainants, their feelings will be even better salved; indeed they ill be constrained to champion the plant as a sort of incarnaon of their own sagacity.

I suggest therefore that the beds be covered with a low, light ame structure, and that instead of a chimney, a return draught pe be laid, beside the present blast pipe, leading back to the oiler-house and delivering its draught *through the fires* into the oiler-house chimney. This would necessitate, of course, a pecial arrangement of blast gates, so that the steam plant ould not be the worse for the change, but this is a simple mater. The benefits obvious to the neighbors would be:

1 That the beds they hate are no longer at large, but are onfined and out of sight.

2 That all the gases arising from them are purified by passng through the furnaces before discharge.

3 That the residual gases are carried to the top of a chimney nd completely lost in the hot ascending smoke and coal gas.

Perfect circulation of air through the filters could be mainained in this way and bacterial action would not be hindered. ncidentally the exclusion of snow and the avoidance of ice ormation would lighten somewhat the labors of the man in harge. The shed would cost but little, and the pipe to the oiler-house will be much less expensive than a chimney.

If you think well of my proposition I hope that you will subnit the enclosed copy to Dr. Lewis. If you do this I shall be glad o know what you and he think of it.

Dr. Watson said that many of the statements in the affidavits were "gammon," that there "are 50 worse nuisances in the heart of the town," and that the only reasonable objectors were those who lived very close to the beds.

Dr. Caverly watched the construction of the plant very carefully, and shortly after its operation began he took away a bottle of effluent, which, when kept in a warm place, developed putrefactive tendencies. This dampened his hopes, and he has given the system no attention since. He has heard some complaints regarding odor, but none concerning the character of the effluent.

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None of the doctors knew of any illness in their judgment attributable to or influenced by the disposal plant, and none of them question its efficiency as a sewage-purifying apparatus.

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My own convictions are these:

1 That the Edgars probably have just cause for complaint, because of odors generated while the fan is not running.

2 That many of the complaints are purely imaginative or grossly exaggerated.

3 That the plant is performing well its primary function of turning foul sewage into clean water.

4 That the objectionable odors can be eliminated entirely without difficulty.

I believe that the operation of the fan for 24 hours each day, in accordance with the provisions of the original design, will remedy the trouble. This is the only material point wherein this plant differs from others working satisfactorily under the same system.

I am very loath to recommend any further action, yet I know perfectly well that the habit of criticism formed by the complainants will continue to assert itself, through the imagination if in no other way, for some time before it perishes by atrophy. The regular operation of the fan alone will produce no *outward* and *visible* sign of change to appeal to the eye, and through it to the mind. It may be wise therefore to go a step further than is actually necessary. If this step can be made to coincide without detriment with the expressed opinion of some of the complainants, their feelings will be even better salved; indeed they will be constrained to champion the plant as a sort of incarnation of their own sagacity.

I suggest therefore that the beds be covered with a low, light frame structure, and that instead of a chimney, a return draught pipe be laid, beside the present blast pipe, leading back to the boiler-house and delivering its draught *through the fires* into the boiler-house chimney. This would necessitate, of course, a special arrangement of blast gates, so that the steam plant would not be the worse for the change, but this is a simple matter. The benefits obvious to the neighbors would be:

1 That the beds they hate are no longer at large, but are confined and out of sight.

2 That all the gases arising from them are purified by passing through the furnaces before discharge.

3 That the residual gases are carried to the top of a chimney and completely lost in the hot ascending smoke and coal gas.

Perfect circulation of air through the filters could be maintained in this way and bacterial action would not be hindered. Incidentally the exclusion of snow and the avoidance of ice formation would lighten somewhat the labors of the man in charge. The shed would cost but little, and the pipe to the boiler-house will be much less expensive than a chimney.

If you think well of my proposition I hope that you will submit the enclosed copy to Dr. Lewis. If you do this I shall be glad to know what you and he think of it.

In replying, kindly address me at my New York office, 156 Fifth avenue, sending a duplicate to The Brooklawn, Euclid avenue and Fairmount street, Cleveland, Ohio.

Very truly yours
G. EVERETT HILL

*January* 16, 1902

Dr. Sutton, health officer of Albion, N. Y., said this day, in the course of a conversation with the undersigned, concerning complaints against the sewage disposal plant at the refuge:

"The complaint alleges that the effluent from the plant is foul and malodorous, but this is not so. So far as I could see—and I examined it closely—the effluent is absolutely good and sweet; there was nothing about it which could be called detrimental or objectionable."

Questioned as to whether or not the present system is an improvement over the old conditions, he said:

"There is no comparison; the conditions are entirely different. * * * The filters are doing their work all right, and the only valid ground for objection is such smell as rises from the surface of the beds. * * * Really I think much of the testimony taken is ancient history, and refers to the conditions which existed before Waring's plant was put in. It does not properly represent the conditions now."

He stated that the odor was most noticeable at night and in the early morning, and he thought that the shutting down of the fan at night would probably account for all the trouble.

G. EVERETT HILL.

ALBION, N. Y., *January* 24, 1902

*Secretary of State Board of Health, Albany, N. Y.:*

Dear Sir—I am informed that Mr. Hill of New York visited the Western house of refuge recently at your request to examine the condition of the sewage disposal plant at that institution with a view of remedying the cause for complaints, if any existed. While there the question of covering the plant was con-

sidered. Will you kindly inform me whether or not any definite recommendations have been made, as I expect to visit Albany next week to see that a bill is prepared covering the needs of the institution.

Respectfully yours
W. J. STERRITT
*President*

ALBANY, N. Y., *January* 29, 1902

W. J. STERRITT, *President House of Refuge for Women, Albion, N. Y.:*

Dear Sir—In reply to your communication of the 24th instant in connection with the sewage disposal plant at the Albion house of refuge, you are informed that this Department has deemed it advisable to have the plant run night and day for 30 or 60 days under the inspection of one of the consulting engineers of this Department in order to determine whether or not the plant is a sanitary one. It is further advised that the plant be covered in any event. After the test as suggested above this Department will be in a position to determine what further action, if any, is necessary to be taken in the matter.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

SCHENECTADY, N. Y., *July* 2, 1902

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—In the matter of the alleged odors complained of at the sewage disposal plant at the Western refuge for women at Albion, N. Y., I beg to report that I visited the plant on June 17th and made a close examination of it. At the time of my visit there were no odors which I could discover farther than 10 feet from the beds themselves. The day of my visit was a bright day but rather cool. Mr. Westcott, the superintendent of grounds, states that occasionally on damp, warm weather the odors are more marked and can be traced for several hundred

feet from the beds in the direction of the wind at the time. I called on the clerk of the village board of health and also met the president of that board and learned that the board had not received any complaints of the odors and were not aware that there were any serious odors. I also called at the office of the health officer of the town board of health but found him out of town, and no other member of the town board living in the village could be found. Mr. Westcott stated that the state architect was contemplating the placing of a building over the beds and the leading of a flue from the building either to a special chimney built for the purpose, or to the boiler furnace in the engine house. While it is no doubt true that odors occasionally are observed, I have been unable to learn that at any time they are serious or in any degree unsanitary.

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

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# VILLAGE OF SARANAC LAKE

## Sewer plan changes

SCHENECTADY, N. Y., *August* 8, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—I beg to report that agreeably to your instructions of July 9th I visited the village of Saranac Lake for the purpose of examining and reporting as to the propriety of approving the changes of sewer plans requested by the village authorities, and also of reporting as to whether provision should now be made in that village for sewage disposal. The application in question was dated June 24th and called for: (1) The raising of the sewer grade on Ampersand avenue by three feet; (2) the change of location of the sewer line from the north end of Elm street around to Line D by carrying it across the N. Y. C. & H.

R. R. R. tracks and bringing it back again; (3) and finally the change of location of the Broadway sewer from Broadway as now approved to a location along the low ground through private property just northeasterly of and parallel to Broadway and distant therefrom about 150 to 200 feet, entering the river just below the Broadway bridge, or joining the Bloomingdale sewer and running thence along Bloomingdale avenue to Broadway, and thence to the river as now approved.

On these three points of proposed change I beg to submit the following recommendations:

For the first I recommend its positive refusal. The sewer grade as now planned and adopted is none too high to sewer the large area of low ground north of Ampersand avenue and near the railroad Y, even after some filling in of the lowest portion is done; to add three feet to the necessary filling before the district could avail itself of the village sewerage facilities would be an unwarranted burden on the property. The only advantage to be gained would be a shallower cutting as far as Broadway, an advantage not to be set against the more serious injury of denying sewering facilities to a large tract of village territory available, with slight improvement, for building purposes.

Concerning the second change of location at the point of junction with Line B, I recommend granting the permission to change.

On the third point of change from the location in Broadway to private property parallel thereto, I do not recommend the granting of the change unless the village authorities can first submit the formal consents of the owners of private property passed over, with their formal permission, not only to lay the sewer on the line proposed, but also to have access at all time to the ground along the line for examination, change, cleaning and repairs, with the guaranty that no buildings nor other obstructing objects will at any time be built over the line nor so near it as to interfere with the above-mentioned access. The line through the street will be in earth and solid rock; that

through the marshy land in private property will be through muck, boulders and much water, and will on those accounts probably be more expensive to build than in the street. I beg to recommend also that before consent to the change is approved, the village authorities be also required to submit authentic evidence, based on actual reliable examinations and borings, that the line through private property can be built more cheaply or at least as cheaply as along Broadway.

It is also more than likely that a sewer along the low marshy ground proposed for the line would have to be laid with iron pipe to keep out the ground-water, which will here have such a head over the sewer and be in such volume as to seriously encroach on the flowing capacity of the sewer itself.

Concerning the matter of the present necessity for sewage disposal, I beg to report that in my opinion this matter may safely be deferred for the present, provided the sewerage of the village be brought to the lower end of the system and below the Pine street bridge, say to a point at or below the junction of Bloomingdale and Columbia avenues. In this connection I beg to call attention to the fact that the State Board has already approved plans for building the interceptor sewers that would bring the sewage down to the Pine street bridge or below. This was done under the "emergency" provision of chapter 928 of the laws of 1895, which give the local boards of health peculiar and extraordinary powers and are authorized only in cases of extreme necessity. If these conditions prevailed to the extent to warrant the exercise of those powers, the work warranted by the authority and the state approval of it should be promptly constructed. I find, however, that this has not been done notwithstanding there is an urgent need of the sewers called for by these two or more grants of authority. This necessity occurs for two reasons: first, the authorization of the sewer along Maple avenue under such an amendment of the original plan as would enable the work to be done promptly was granted because of the danger which the sewers and private drains produced by their discharge directly into Lake Flower, which is the source

of the village water supply. Although this supply is supposed to be drawn from a point nearer the opposite side from Maple street, as a matter of fact the water actually enters the intake pipe down near the dam at Main street. Even were the intake repaired and the water taken in at its upper end the proximity to the sewers is too close to warrant the use of water from such source. Either the sewers or the water intake should be required to be taken out of this small pond or body of water. Second, the authority to build a sewer along the river below the dam down to and below the Pine street bridge was granted because of the unsanitary conditions caused by the flow and the stranding of sewage through the village. These conditions have not been at all improved by any sewer improvements, though the village has required the Chateaugay railroad company to remove a log boom from the river and has removed a sawmill from the vicinity of the Main street bridge, both on grounds of sanitary necessity.

While I do not therefore recommend the taking of measures to require the construction of sewage disposal works, I do most emphatically recommend that the necessary action be taken by the State Department to see that the sewers already approved by the State Board of Health under the emergency law be speedily constructed, and that all sewers entering the river be connected with these intercepting sewers so that *no sewage* enter the river nor Lake Flower above the intersection of Bloomingdale and Columbia avenues.

I am, dear sir

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

SARANAC LAKE, *September* 23, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—Your recent communication in reference to sewers in this village was duly received, and at a special meeting of the board of health the matter was considered. At that meeting,

held this evening, formal action was taken ordering the village trustees to proceed at once to fulfill the requirements of your instructions.

Similar action had been taken previously but with no result except to divert attention to the obviously unsafe source of the water supply. The need for such sewers as that on Maple street was imperative, but the necessity for an immediate change in our system of water supply was of greater importance. The village was therefore bonded for $50,000 recently to expend on water works.

Engineer's specifications are now prepared for changes in the same, which contemplate the abandonment of Lake Flower as a source of supply. Two thousand five hundred dollars was appropriated for sewers, which is now available, but has not been expended pending decision of your office on the Broadway sewer question.

The Maple street sewer involves unusual expense and difficulty in construction and will require much time. The question was therefore asked of the board of health by the village trustees this evening:

1 Whether the State Board would grant postponement of its order for the Maple street sewer and of the trunk sewer along the river below the dam in view of the proposed changes in the water supply?

2 Whether, after the construction of new water works, removing all danger to the supply from Lake Flower, the Board would consent to the private sewers being continued above the dam, dispensing with the Maple street sewer altogether or indefinitely?

The village board of health has no sympathy with either of the propositions and has officially taken action recommending the filtration or boiling of the drinking water until the water supply is changed.

It has not as yet ordered the discontinuance of the private sewers because of the impossibility of controlling other sources of contamination and the impracticability, to my mind at least, of improving the situation much because of the topography of Maple street.

An early decision on these points will aid us in accomplishing proper conditions in this matter.

I am, sir

Yours sincerely

EDWARD R. BALDWIN

*President board of health*

ALBANY, N. Y., *September* 17, 1901

E. R. BALDWIN, M. D., *President Board of Health, Saranac Lake, N. Y.:*

Dear Sir—I enclose herewith for your information copy of a report made by Prof. Olin H. Landreth upon his investigation as to the propriety of approving certain changes in the sewer system of the village of Saranac Lake, also as to the necessity of providing sewage disposal for the village.

In view of the report made by Professor Landreth, it is insisted by this Department that the authorities of Saranac Lake cause the construction of the sewers already approved, and that all sewers entering the river be connected with the intercepting sewers so that no sewage enter the river near Lake Flower above the intersection of Bloomingdale and Columbia avenues.

You are requested to advise this Department of such action as may be taken in the matter of complying with the above instructions.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

SCHENECTADY, N. Y., *October* 26, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—In the matter of the communication from Dr. E. R. Baldwin, the president of the board of health of the village of Saranac Lake, dated September 23, 1901, which you referred to me on the 7th instant, I beg to report that I have delayed this communication till I might learn more of the facts surrounding the proposed improvements at Saranac Lake.

I have ascertained from unofficial but thoroughly reliable sources that no active steps have been taken to abandon Lake Flower as a source of supply for the water system beyond an examination and report on another source of supply, and possibly estimates of cost of the new supply. Also that contracts are now either let or contemplated at an early date which will consume so large a part of the bond issue of $50,000 as will not leave enough to procure the new supply or any considerable part of it. The early abandonment of Lake Flower as a source of supply therefore appears hardly probable, and it will be safe to assume a continued use of that source for some time at least.

In view of this state of affairs, I do not hesitate to recommend that the local authorities be required to construct the sewer on Maple street without unnecessary delay, as the present discharge of sewage into the source of water supply is an unquestioned menace to the health of this village, whose sole claim to consideration from the outside public is that of a health resort. I also beg to recommend further that the local board of health be asked to explain with some definiteness what the circumstances and conditions are that render it impossible to control the other sources of pollution referred to in the communication from the president of the board above mentioned.

There is further nothing in the topography or other features of Maple street which render it impracticable to improve the conditions of Lake Flower as affected by the pollution from Maple street.

Inasmuch as I consider this sewer of decidedly greater importance to the health of the village than the trunk interceptors down the river below the end of Lake Flower, I should not object to a reasonable delay in the latter sewers provided such delay will hasten the construction of the Maple street sewer, which appears to be the only way that the present water supply can be protected from sewage contamination. I do not favor the delay in the construction of the lower sewers *unless* such delay be utilized to hasten the Maple street sewer, nor further unless such delay shall be only temporary. From the best evidence at command it would

appear that Lake Flower is very badly contaminated, not only from the Maple street portion, but from other sources. President Baldwin's explanation concerning Lake Flower, if given, will doubtless throw some light on this matter.

I am, dear sir

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

ALBANY, N. Y., *November* 8, 1901

E. R. BALDWIN, *President Board of Health, Saranac Lake, N. Y.:*

Dear Sir—I enclose herewith for your information copy of a report made by Professor Landreth in the matter of your communication to this Department under date of September 23, 1901.

Professor Landreth's report meets with my approval, and this Department will look to the authorities of Saranac Lake to carry out without delay such recommendations as are made concerning the construction of the sewer on Maple street, also the abandonment of the present source of water supply.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

## VILLAGE OF HOMER

### Defective drainage

SCHENECTADY, N. Y., *November* 12, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—Agreeably to your instructions of October 31st I visited the village of Homer, Cortland county, N. Y., on November 2d for the purpose of examining into the matter of defective drainage arising from a small stream running through the village and emptying into the west branch of the Tioughniogo river on the east side of the village.

The stream in question is a very small stream which apparently runs dry in dry weather and is never a large stream. It flows through a thickly built portion of the town, passing through dooryards, gardens and under houses and stores. The fall of the creek in the part through the private property is very slight, and the flow accordingly sluggish. In the lower part of its flow the fall is ample for a good velocity.

For the greater portion of its flow through the built-up part of the village and through the lower part, where it flows across and along some streets, the stream is flagged over. There are a number of points where the stream receives sewage, garbage and other refuse and is thereby badly polluted. The bed of the stream is, moreover, so high that water from it backs into a number of private cellars and into the cellar of one hotel. Toward the lower end of the flat portion there has occurred an obstruction from some cause, apparently by the gradual filling up of its bed by refuse matter, which causes the water to rise even higher than otherwise and also to cause exceedingly unsanitary conditions by the detention of decomposing organic refuse. The stream has been a source of complaint for years, and the village board of health has presented the matter to the board of trustees of the village without relief. The condition of the stream is a serious menace to the health of the residents living near it and should be promptly and thoroughly improved. If the village trustees cannot be induced to abate the conditions the board of health should do so.

The village has no sewer system whatever, though it has a public water supply used by about one-half of the population. The drainage from houses and places of business is wholly into cesspools and privy vaults. During the fall of 1900 there were between 30 and 40 cases of typhoid fever, and in nearly all the cases the patients had used village well-water, which can hardly fail to be infected from the vaults and cesspools, as the soil is very porous. My attention was also called to a sewer from one of the other hotels which discharges into the Tioughniogo river just above a mill dam and causes trouble at the mill. Numerous

complaints had also been received by the local board of health concerning the discharge of refuse from a milk station into a cesspool belonging to the station, the complainants claiming that their wells had been injured by the seepage from this pool.

There would appear to be but one remedy for all these defects, viz: a sewer system, which is greatly needed on account of the large number of houses which have public water and no systematic drainage from the houses. Even if the entire system should not be built now, the special defects referred to can only be abated by building sewers to provide for these defects, and they should not and legally cannot be built without there first being prepared a plan for an entire system of sewers for the village in order that the sewers first built may be so built as to form a part of the entire system when ultimately constructed.

The village is amply able to provide for a complete system at once without inconvenience, and would realize decided benefits therefrom not only from the direct improvement of sanitary conditions, but from the indirect influence such an improvement would have on the general reputation of the village as a desirable residence place. The population of the village is about 3000. There is every indication of prosperity, thrift and intelligence. The village has no debt except a small outstanding issue of school bonds. The tax rate for state, county, school and village purposes is about $2.40 per $100 of assessed valuation.

A sewer system would not be expensive, as there is every indication that rock would not be encountered in the trenches, and the mileage of streets is not as great as with most villages of this size. Moreover, the construction of sewers should be fully accomplished before the paving of streets, which will be a near future improvement.

I beg therefore to recommend:

1 That you direct the village board of health to proceed to abate the extremely unsanitary conditions arising from the small stream above described, or to issue and enforce orders for its abatement.

2 That the village board of health be advised to have plans procured for a complete system of sewers for the entire village, including the district covered by the defective conditions above mentioned, and that the board be informed that if the abatement contemplates the building of a sewer along the line of the stream or at any other point, the preparation of such a complete plan will be a necessity in order to comply with section 260 of chapter 414 of the laws of 1897, being the village law.

3 That the board of health and through it the village authorities and the public be advised to improve the sanitary condition generally by the prompt construction of the sewer system contemplated.

4 That the board of health be directed to report to you whatever action may be taken by its board or by other village authorities in compliance with the above recommendations.

I am, dear sir,

Very truly yours

OLIN H. LANDRETH

*Consulting engineer*

ALBANY, N. Y., *November* 18, 1901

E. M. WILLIAMS, *President Board of Health, Homer, N. Y.:*

Dear Sir—I am in receipt from Prof. Olin H. Landreth of a copy of his report upon a recent investigation as to unsanitary conditions existing in the village of Homer, the original report having no doubt been sent to you by Professor Landreth, who makes the following recommendations:

1 That the village board of health proceed to abate the extremely unsanitary conditions arising from a small stream running through the village and emptying into the west branch of Tioughniogo river, issuing and enforcing orders for its abatement.

2 That the village board of health, through the proper village authorities, have plans procured for a complete system of sewers for the entire village, including the district covered by the defective conditions mentioned in the report.

The report of Professor Landreth meets with approval by this Department, and it is advised that prompt measures be taken by the authorities of Homer to place their village in a sanitary condition, one of the essentials to that end being a system of sewers, as no village having a public water supply should neglect to provide promptly for the care of the liquid waste and sewage entailed by a public water supply. It is therefore directed that the board of health of Homer require the abatement of the nuisance caused by the small stream running through the village, and that the attention of the village trustees be called to the necessity of their providing for a sewer system in accordance with the provisions of chapter 414 of the laws of 1897.

Report to this Department such action as may be taken by the board of health or other village authorities in order to comply with the recommendations contained in the report of Professor Landreth.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

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## HAMILTON COLLEGE

**Sewers for fraternity houses**

UTICA, N. Y., *July* 12, 1901

*State Board of Health, Albany, N. Y.:*

Gentlemen—Near the foot of College hill in the town of Kirkland, N. Y., and just outside the limits of the village of Clinton, are located four college fraternity houses, viz.: Delta Kappa Epsilon, Delta Upsilon, Theta Delta Chi and Psi Upsilon.

All these houses are now drained into cesspools and have very incomplete and unsatisfactory sanitary systems, and very lately the town board of health of the town of Kirkland have

made complaints and asked for changes involving considerable expense.

The societies have for some time desired to build a sewer leading eastward from their houses to the Oriskany creek, about one-third of a mile distant, and we have just succeeded in obtaining the consent of owners of private property to pass through their lands with a six-inch vitrified pipe sewer.

The town board is heartily in favor of this change. The Clinton village sewer empties into the Oriskany creek about a mile below where the proposed sewer will enter, and no houses intervene between these points on the creek.

We hope to be able to raise the money to do this work during the present summer vacation so that the system may be in working order on the opening of the college in September.

Dr. I. De Vere of Clinton is the president of the local board of health and largely at his instigation I have undertaken to get all interests united in favoring this plan.

All the chapter houses have wells, mostly driven, and can readily supply sufficient water to flush the sewer properly, as the descent is quite rapid on the portion of the hill where they are located. Will you kindly investigate the matter at once, and if agreeable to you grant us the usual permit for construction of the sewer?

Awaiting your further advices, I am

Truly yours
THEODORE L. CROSS
*For Trustees Psi Upsilon*

SCHENECTADY, N. Y., *August* 23, 1901

DANIEL LEWIS, *State Commissioner of Health, Albany, N. Y.:*

Dear Sir—I beg to report that agreeably to your instructions of July 17th I visited Hamilton college, Clinton, N. Y., for the purpose of looking into the matter of the proposed sewer from the four fraternity houses adjoining the college grounds, viz.: the Delta Kappa Epsilon, the Delta Upsilon, the Theta Delta Chi and the Psi Upsilon.

On reaching the village and inspecting the premises of the four houses I found that they were much in need of sewerage facilities, but that no plan had been prepared for a sewer nor had the four fraternities even come to any arrangement or agreement as to the fact of a sewer being built, much less of any association of the four fraternities to provide for the execution of the work.

My examination of the stream into which it is proposed to discharge the sewage from the four houses, aggregating about 100 occupants, leads me to the opinion that it would be entirely unsafe to discharge raw sewage into the stream, as the point of discharge is a long mill pond and a long mill race, both slack and without any appreciable current, and a nuisance would be almost sure to follow the use of such a sewer. I advised the representatives of all but the Delta Kappa Epsilon, whom I did not see, that a sewer was greatly needed, but that in order to get the matter properly up for consideration it would be necessary to have a plan prepared and for the four fraternities to form an association to provide for the execution of the work and to appoint some one person or fraternity as the representative of the four with whom we might deal and with whom contractors might deal.

I also stated that while it would be premature to speak of the plan for the sewer prior to its preparation and submission, informally I might say that I should not be willing to recommend for approval any sewer that did not include manholes and a straight alignment between manholes, and that did not also provide for some degree of sewage treatment before discharge into the stream.

The local board of health is crowding the fraternities, or at least some of them whose sanitary conditions are the worst, to build a sewer, and these fraternities are urging the others who are not under pressure to join them, while the latter are not disposed to help them.

Dr. De Vere, the health officer of the town of Kirkland, Oneida county, in which township the fraternity houses are situated, is in earnest and proposes to insist on better sanitary conditions

at the houses in question, and I think it will be sufficient to wait for him to accomplish the needed improvement, or at least to get the fraternities up to the point of making the improvement.

Very truly yours
OLIN H. LANDRETH
*Consulting engineer*

## VILLAGE OF AVON

### Defective sewers

AVON, N. Y., *September* 12, 1901

*State Board of Health, Albany, N. Y.:*

Gentlemen—The village of Avon is and for the past five months has been maintaining a nuisance of the worst description on the main street of the village. Complaint has been made to the local board of health, to the board of trustees and to the board of sewer commissioners, and nothing is done to abate the nuisance. The trouble is an old wood sewer, with a fall of over 40 feet in a mile, rotting out. It clogs up and the sewage breaks out and runs over the surface, where it is not stagnant, until it reaches the river. Can your honorable board take any action that will compel the authorities here to attend to the matter at one? If not, please advise by return mail and oblige

Yours respectfully
J. W. DOWNING

WAVERLY, N. Y., *September* 20, 1901

DANIEL LEWIS, M. D., *State Department of Health, Albany, N. Y.:*

Dear Sir—Agreeably to your telegram of the 16th instant, "Services are required in village of Avon to advise as to sewer," proceeded the 17th instant and called upon Health Officer E. C.

Perry, M. D., and Secretary of the board of health George H. Hunt. With both officials visited the line of sewer complained of as a nuisance and as such condemned by the board of health of Avon.

It appears about 22 years ago a sewer was constructed leading from the summit of the village in nearly a straight line through Main street to the Genesee river, a distance of about 3388 feet. At the base of the hill, or within a few rods, the lower two-thirds of the distance to the river was constructed of hemlock plank, with inside opening 10 by 12 inches covered with earth. The upper portion, with subsequent extension for about 1500 feet, constructed of vitrified 8-inch tile pipe. It is stated this original sewer has afforded ample accommodation for sewage and surface water until within two or three years, or at least until the wooden portion became rotten.

About six years ago a new system was adopted, plans and specifications made, submitted to the State Board of Health, and approved December 4, 1894. This new sewer system was intended for sewage only, with sufficient capacity for sewage of a population of 3000 to 5000 inhabitants. At the present time the wooden portion, extending to the river, is decayed and in a rotten condition in many places, the earth having fallen in, sewage and surface water flowing over and upon the surface of the ground and street, presenting an unsightly spectacle and menacing public health—unqualifiedly a public nuisance.

There exists a controversy over the legality of abating the nuisance in connection with private, public and vested rights in the old sewer. In regard to "advising" in this respect, can only refer to provisions of the Public health law, article 2, chapter 661 of the laws of 1893, governing local boards of health.

In an interview with Supreme court Judge Nash, who resides in Avon, he states that when the old sewer was put down it was done without legal authority. The new sewer was submitted to a vote of the people and carried. Plans and specifications were submitted to the State Board of Health and approved. The sewer laid in conformity therewith. This action

abandons the old sewer, which has no legal existence. The expedient for abating the nuisance seems to be reconstructing the decayed and rotten portion of the old sewer, which view is entertained largely by the people and majority of the health board, including E. C. Perry, who promised to mail me a supplemental report or statement in detail, which I herewith annex.

Respectfully submitted.

WM. E. JOHNSON
*Secretary State Board of Health*

SUPPLEMENTAL REPORT ON THE MATTER OF THE ORIGINAL MAIN STREET SEWER, VILLAGE OF AVON, N. Y., BY E. C. PERRY, HEALTH OFFICER.

*To the State Board of Health, Albany, N. Y.:*

Gentlemen—I beg to submit the following report, supplemental to the report of your representative, Dr. W. E. Johnson, who was sent to Avon September 17, 1901, to investigate a nuisance caused by the breaking of the old, original trunk sewer on Main street:

About 22 years ago there was constructed a sewer, partly of plank, partly of tile, extending from the Genesee river up to and beyond the village park, passing almost in a straight line through Main street, a distance of over 3880 feet. A few years later the tile portion of this sewer was continued up East Main street a distance of approximately 1500 feet. This last portion was constructed partly at the expense of the residence owners and partly at the expense of the corporation, a contract being made by the village trustees holding office at that time with the residence owners to the effect that if the latter would furnish the tile the village would meet the remainder of the expense. The purpose of this Main street sewer, now called the old sewer, was to carry the *surface water* from the street and the *sewage* from the residences. People were allowed to connect their house drains to the said sewer throughout its whole course—to both the tile and the plank portions. It was used as a public sewer and maintained as such up to the present time, being kept in repair by the trustees and sewer commissioners, and the expense of such repairs

paid for with corporation money. Now, during the construction of this sewer, a certain Dr. Phelps, through his attorney, E. A. Nash, obtained an injunction restraining the trustees from laying this sewer at public expense. But one of the residence owners, who was also one of the trustees at that time, Dr. Cyrus Allen by name, succeeded in having this injunction dismissed by a supreme court judge, Judge McCumber, who authorized the trustees to complete and pay for this sewer. The village sewer system up to 1895 consisted of this original old sewer, together with its few laterals. The names of the trustees who constructed it, or who were on the village board at that time, are, Dr. Cyrus Allen, F. N. Isham, J. C. Davenport, Hugh Tighe and Patrick Gleason, all living and from whom the above facts have been collected. From what I have stated it is evident that this original old trunk sewer on Main street was a public sewer, used and maintained as such, and that its construction was legal—all having an important bearing upon the case. Now, during the present summer the hemlock planks, of which the lower portion of this sewer was constructed, rotted away in places, allowing the sewage to find its way upon the surface of the street, thereby causing a nuisance. Complaint was made to the board of health, and, as health officer, I examined and condemned the same, and the sewer commissioners abated the nuisances by repairing the sewer. The expense of this was paid out of village funds. Later on this plank portion of the old sewer broke down in several places. Complaint was again made by one Fred Barnard. The same was examined into in legal form and also condemned, and at the direction of the board of health I served an order for abatement. Considering that this was a public sewer, maintained by the sewer commissioners, I served an order on them to abate this nuisance. The sewer board of commissioners requested a sufficient sum of money from the village trustees to abate the nuisance by reconstructing the entire wooden portion of the Main street sewer, for it was evidently necessary either to reconstruct or abandon the same. The village trustees held that they had no authority to raise this money except by vote. The sewer commissioners then took legal advice and

refused to abate the same on the ground that this sewer was not under their jurisdiction because there had been constructed in 1894 or 1895 a new set of sewers, known as the *new* sewer system, in contradistinction from the *old* original *Main* street trunk sewer. By referring to the 15th annual report of the State Board of Health, 1895, maps, No. 12, you will find a map of this *new* sewer system, which is now in running order, though insufficient at certain times of the year. Now if you will take this map No. 12, you can see the ground over which this new sewer goes. This map does not show the old trunk sewer on Main street, the cause of the present trouble. There is this difference between the old and the new sewer systems: The former was constructed to take both surface waters and sewage, while the latter was constructed to take sewage alone. The new sewer cannot fill the purpose of the old Main street sewer. The new sewer was not designed to drain the cellars on upper East Main street, while the old one was. After serving the notices on the sewer commissioners to abate the present nuisance, a joint meeting of the board of trustees, health and sewer commissioners was held to discuss the best way out of the difficulty. Several plans were talked over, the most feasible of which was the reconstruction of the old Main street sewer. The property owners on Main street claim vested rights in the old sewer, and it certainly would be an injustice to them to abandon it, since this upper portion of the old Main street sewer is of tile, in good repair and serves its double purpose well, i. e., for surface drainage as well as sewage, and many of the best taxpayers in the village are using it. To order them out of the old sewer, across the street into the new sewer, would probably result in expensive litigation. On the other hand, the old sewer is the only means we have of getting rid of the surface water. To further complicate the matter, the new sewer is insufficient at certain seasons of the year to carry all that gets into it so that the sewage escapes from the top of the last manhole of the new sewer on West Main street. By reconstructing the old sewer of large tile, the surplus or overflow from the new sewer could be

turned into it where the reconstructed old sewer would pass this manhole of the new sewer on West Main street on its way to the river, *so that the reconstruction of the plank portion of the old sewer, replacing it with large tile, would not only abate the present nuisance on hand, but would serve as a relief for the new sewer at said manhole on West Main street.* The reason why this new sewer overflows is because, by reference to map 12 above mentioned, you will see that two 8-inch tile sewers converge and join into one 8-inch tile outlet, and there is a backing up of water and sewage in the new sewer, so it overflows at the last Main street manhole. All these things were discussed at the joint meeting of the three village boards, and certain questions arose, viz.: (1) Under whose jurisdiction does the old sewer come? is it the board of sewer commissioners? (2) Is not the old sewer just as much a portion of the village sewer system as the new one? (3) If expedience shows that the old sewer should be reconstructed, who has the power, and how is the money to be raised? (4) Have the various boards rights to abandon that old sewer without consent of the property owners? While it seemed expedient to rebuild the old sewer, it was, in the face of these questions as to power and source of meeting the expense, decided to request the presence of a representative of your Board to help us out in the matter. As health officer, it is my opinion that the best way to abate this nuisance is to reconstruct the old sewer; it will also do away with another nuisance by acting as a relief to the insufficient new sewer.

To recapitulate: There are two sewer systems in the village of Avon, the old Main street sewer for sewage and surface water, and the new sewer for sewage only.

The lower part of the old sewer, constructed of plank, has rotted out and caused a nuisance.

The new sewer is insufficient at certain seasons of the year, with an overflow of sewage at last manhole on Main street.

The only way to abate the nuisance of break in old sewer system is either to abandon the the old system and order those connected with it to connect with the new system, or else reconstruct the lower portion of the old sewer.

The property owners on the upper portion of old system claim vested rights in the same by reason of special contract with the village, and their paying part of the expense of the same and the sewer having been legally constructed. They object to abandoning the old sewer.

To reconstruct the old sewer where it has decayed by replacing the plank by tile will abate the nuisance.

If the old system is reconstructed of 12-inch to 15-inch tile on the lower portion it can relieve the insufficient new sewer by allowing the last manhole of new system on Main street to be connected with it as an overflow outlet.

In order to proceed we desire an authoritative statement: (1) As to who maintains the nuisance, if the sewer commissioners do not by failure to construct and operate the old sewer. (2) As to the rights of the property owners to have their old system maintained and the powers of the trustees or sewer commissioners to abandon the same. (3) If expediency demands the reconstruction of the old sewer system, how to proceed to reconstruct and pay for the same.

Personally and as health officer I believe the reconstruction of the lower portion of the old sewer system the best means of abating the nuisance.

Having gone into the subject exhaustively, and believing that I have stated the facts as they are, I trust I have made the situation plain and hope for your early advice in the matter.

Respectfully yours

EDWARD C. PERRY

*Health officer*

Avon, N. Y., September 18, 1901.

ALBANY, N. Y., *October* 7, 1901

E. C. PERRY, M. D., *Health Officer, Avon, N. Y.:*

Dear Sir—I am in receipt of the report made by Dr. W. E. Johnson, the secretary of this Department, upon his investigation of complaints received concerning defective sewage in the village of Avon, and have read with interest your supplemental report.

In view of the evident unsanitary conditions existing at Avon, caused by the breaking down of a portion of the sewer on Main street and the additional fact that the new sewer recently constructed is inadequate to properly sewer your village, it is advised that your board take action under section 21 of the Public health law, which provides as follows:

"Whenever such local board of health in any incorporated village shall deem the sewers of such village insufficient to properly and safely sewer such village, and protect the public health, it shall certify such fact in writing to the board of trustees of such village, stating and recommending what additions or alterations should in the judgment of such board of health be made with its reasons therefor, and thereupon such board of trustees shall immediately convene and consider such recommendations, and if approved by such board of trustees, the same shall be certified to the State Board of Health for its approval, and if such recommendations shall be approved by the State Board of Health, it shall be the duty of the board of trustees of such village to forthwith make such additions to or alterations in the sewers of such village and execute such recommendation, and the expenses thereof shall be paid for by said village in the same manner as other village expenses are paid and said village is hereby authorized to raise such sum as may be necessary for the payment of the expenses incurred, as herein provided, in addition to the amount such village is now authorized to raise by law for corporation purposes, and such board of trustees shall have the right to acquire such lands, rights of way, or other easements, by gift, or purchase, or in case the same can not be acquired by purchase the board of trustees may acquire the same by condemnation in the manner provided by law."

In your recommendations to the village trustees it is suggested that you advise the extension of the tile sewer to take the place of that portion constructed of wood.

Plans of such extension should be presented in duplicate to this Department for approval.

I will look to your board to take prompt action in this matter that the existing nuisance in your village may be abated at an early date.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

## VILLAGE OF BURDETT

### Complaint of F. L. Van Horn

BURDETT, N. Y., *May* 6, 1901

*President State Board of Health:*

Dear Sir—Attached please note reply of local board of health answering my complaint in regard to sanitary condition of three cellars which I called their attention to. I am very much dissatisfied with their reply, as I consider it unjust to me as well as to all residents in this locality. The cellar under the house of which I rent a part has at present about 28 inches of water in it. This water, of necessity, is directly under my sleeping room. Owing to scarcity of places for rent I am obliged to endure this unless I can prevail on you to have it inspected. I am unable to secure any action from the local board. They are all willing to admit that it is bad and that they would not live over it, and their examining physician admits that disease might originate from it. My family doctor condemns it in the strongest possible manner and has advised me to push the matter and secure a remedy if possible. The water has stood in this cellar almost continuously since last November, and I am satisfied that it is injuring the health of my wife and child. I have tried to induce property owners to remedy it without result and I now appeal to you to look into this matter and have it adjusted. The cellars on either side of me are in as bad or worse condition than this one, and with warm weather coming on I fear the result of this condition. If you care to make any inquiry before inspecting it, I would respectfully re-

fer you to Dr. S. B. Allen, of this place, who has looked it over and knows what there is of it. Hoping you will act on this, I remain,

Yours respectfully
F. L. VAN HORN

BURDETT, N. Y., *April* 30, 1901

F. L. VAN HORN, *Burdett, N. Y.:*

Dear Sir—The board of health respectfully answer your complaint in regard to cellars under houses on the street on which you reside as follows:

We find the cellars in bad condition, but we regard the trouble as one which the property owners are under obligations to provide a remedy for themselves, and if the surface water is the source of the trouble, we suggest that you should ask the board of trustees to provide surface drains to properly convey said surface water away and not allow the same to remain on the street until it percolates into the cellars.

R. A. HOPKINS
*President board of health*
GEO. B. PATERSON
*Village clerk*

ALBANY, N. Y., *May* 8, 1901

WM. E. JOHNSON, M. D., *Secretary State Department of Health, Waverly, N. Y.:*

Dear Sir—I am directed by Commissioner Lewis to enclose herewith for investigation by you papers in a complaint made by Mr. F. L. Van Horn, of Burdett, N. Y.

If upon investigation the conditions are found to be as stated by Mr. Van Horn, it is advised that you confer with the owners of the premises and the local authorities looking to remedying same, and if there is no way of abating the nuisances other than the construction of a drain, provision should be made either by the owners or the local authorities to cause a drain to be built.

When you have made your report, kindly return the enclosed papers to this office that they may be placed on file.

Very respectfully
T. A. STUART
*Chief clerk*

WAVERLY, N. Y., *May* 12, 1901

DANIEL LEWIS, M. D., *Commissioner:*

Dear Doctor—Your communication of the 8th instant at hand, with complaint of F. L. Van Horn, of Burdett, N. Y., enclosed, and "request if the conditions are found to be as stated by Mr. Van Horn, it is advised that I confer with the owners of the premises and local authorities, looking to remedying same, and if there is no way of abating the nuisances other than construction of a drain, provisions should be made either by the owners or local authorities to cause a drain to be built."

In obedience to your request I visited Burdett, N. Y., the 10th instant, and found Health officer, Dr. H. P. Stillwell from home. Called upon the complainant Van Horn, and with the board of health visited the premises named in the complaint, situated on Lake avenue, north side of street. Inspected the cellar and found 14 inches of water, and adjacent cellars of dwellings on either side affected in like manner. The dwellings are situated upon low, flat land, at the base of a high ridge, about 10 or 15 feet. The avenue in front, several inches higher than grade, extending over the ridge or hill, thus forming in the immediate locality a basin, which in rainy seasons accumulates a large amount of surface water to the extent of submerging the cellars without mode of egress, except by evaporation or percolation through soil. The ascending portion of avenue, passing over the ridge or hill, had previously a breakwater constructed to divert the surface water from the direction of dwellings. This had been removed by the village authorities, causing the water in a large measure to course down the hill in the basin described. About 100 feet distant is the terminal end of a drain extending south 1000 feet or more to Hector Falls creek which has been neglected, although stated to be in good serviceable condition but not connected with the cellars. It appears a similar condition has existed for some years. Dr. S. B. Allen states he is a practicing physician in Burdett for the past 23 years; that the principal illness in the locality described is due to the contaminating effects of surface

er in the cellars, and the only group of typhoid fever cases ng his practice have been confined to this locality. The ›graphy is such to permit both drainage and sewerage advan- ›ously. The altitude of Burdett is stated to be 480 feet ve Seneca lake level and one mile east. Population 400. ter supply from wells and springs. A meeting of the board ıealth convened, at which were present R. A. Hopkins, presi- t of the board; H. C. Smith and L. W. Fink. The statement Dr. Allen and the complaint of Mr. Van Horn accepted. The ›ident stated he had conferred with the president of the vil- : and trustees, who have agreed to replace the breakwater he avenue and open the existing drain, extending it to the mises affected by the water. The property owners—Miss ı Dorn, Mrs. Wilcox and Frank Dunham—have mutually eed with the health board to connect with the existing drain ›n extended to their premises. The investigation made upon complaint of Mr. Van Horn is confirmed, and the property ıers and local authorities signify their approval of the thods to be taken in abating the nuisance.

Respectfully submitted.

WM. E. JOHNSON, M. D.
*Secretary State Department of Health*

## ELMIRA HEIGHTS

### Complaint of Ellen Corcoran

ELMIRA HEIGHTS, *May* 15, 1901

NIEL LEWIS, *Health Commissioner:*

Dear Sir—I write you in regard to a pond of stagnant water ich is troubling me and several other families in this vicinity, d we have applied to the authorities of the village of about 00 inhabitants and they have taken no action in the matter, d Dr. H. D. Wey, health officer of Elmira city, advised me to form you. Now this pond is just across the street and every avy rain raises it sufficiently to overflow, and it comes to my

sidewalk and soaks through into my cellar, which has had from one to four feet of water in it since the 11th day of March until this present week, and I could have no fire in my furnace. This pond receives all the drainage from a large manufacturing plant where about 300 or 400 men are employed.

I trust you will give this your attention, as several families are in the same condition as I am, and oblige

Yours respectfully
MRS. ELLEN CORCORAN

WAVERLY, N. Y., *May* 23, 1901

DANIEL LEWIS, M. D., *Commissioner:*

Dear Sir—Your favor of the 17th instant, enclosing complaint of Mrs. Ellen Corcoran, 215 Eighteenth street, Elmira Heights, N. Y., for investigation, duly received. May 21st visited Elmira Heights; called on Mrs. Corcoran at her residence, and examined her premises in complaint. Her cellar walls show a water line to the extent of four feet, bearing evidence of recent submergence. Cellar bottom wet, muddy, and with the débris emitting a foul, disagreeable odor. The furnace fire out and abandoned for present use. Opposite across the street, looking north, is a pond of stagnant water, covering an area of about one and a half acres. During the present excessive rainy season the pond has received and retained a larger amount of surface water than before, the overflow passing over the street and sidewalk to the south side of Eighteenth street on the premises and in the cellar of Mrs Corcoran and others in the immediate locality. One house, unoccupied, said to be untenantable by reason of surface water. The lands adjacent to the pond on the east are higher and occupied by a bicycle factory, employing about 400 men. The drainage from the factory and surface water from the north side of Eighteenth street and east flow into the pond. No residences are situated on the north side of Eighteenth street. On the west side of the village, and in the immediate locality described, is situated a high range of hills, known as Elmira heights, extending far to the north and west beyond the village, to the south, near Elmira. It is at the base of this range of hills, of from 15 to 20 rods in width,

that the water naturally accumulates and courses its way south as drainage. The streets running east and west from Ninth street to Eighteenth street, inclusive, have been raised from six inches at Ninth street to 18 inches at Eighteenth street, thus constituting a series of breakwaters and forming obstructions to the natural drainage.

Accompanied by Health officer S. B. Clark, viewed the premises and locality in complaint. Called upon the president of the board of health, B. L. Gregory, and secretary, F. F. Chase. The consensus of opinion of the board as represented is in harmony with the representations set forth in the complaint of Mrs. Corcoran.

The president of the board gave notice to call a meeting at an early date for the purpose of devising suitable means to drain the pond of stagnant water. The health officer reports no illness from the present conditions of affairs, but concurs in the opinion that if allowed to remain, will be a menace to the health of residents in the locality. Elmira Heights was incorporated in 1896. Population 2000. Water supply from wells, pumped in a reservoir on the heights, and furnished by gravitation. The village is not sewered.

Respectfully submitted.

WM. E. JOHNSON, M. D.
*Secretary State Department of Health*

ELMIRA HEIGHTS, N. Y., *May* 24, 1901

*To the Commissioner of the State Board of Health, Albany, N. Y.:*

Dear Sir—The local board of health of this place has instructed me to write you in regard to a complaint made by Ellen Corcoran of this village, to the State Board of Health, of a nuisance, consisting of a stagnant pond of water near the premises of said Ellen Corcoran.

This board will take immediate steps to abate the same as soon as possible.

Yours truly
F. F. CHASE
*Secretary*

# Investigations in Connection with Contagious Diseases

# BRASHER FALLS

## Diphtheria

ALBANY, N. Y., *March*, 1901

ANIEL LEWIS, M. D., *Commissioner of Health, State of New ork:*

ır Sir—On March 20th I visited Brasher Falls, St. Lawrence y, located upon the St. Regis, in the northwestern part of the y, complaint having been made of the prevalence of scarlet in the village and also in the convent school, known as St. h's academy, which has day and boarding pupils who remain ıtire year, 100 day scholars and 25 boarders, all girls, with ›s of teachers and helpers living in the convent.

: complaint was made by Dr. Smith, living in Winthrop, the ıing town. The health officer lives some 10 miles from the e of Brasher Falls and pays very little attention to his offi- uties, his health being such as to prevent him from active e. I called on Dr. Smith first upon arriving at the village of hrop, but found he had gone into the country. I then drove : convent and found Father Nyan and the mother superioress ısultation over the situation. Several cases of diphtheria ccurred in the village during the previous week and people in and out of these places, visiting the convent as well as te homes. I found three cases of diphtheria in the convent earned that Dr. Brannen, of Lawrence, a village five miles ıt, was in attendance. He was present when I arrived at ›nvent. He has used antitoxin and the patients were doing .

er making a careful investigation and learning all the facts : case, I recommended that the convent be closed and rigidly ntined. I advised that the boarders be immunized with ›xin and the cases be removed to the hospital quarters. Dr. nen will follow out the specific directions as laid down in

such cases by this Department, and Father Nyan said he would gladly cooperate with us and would carry out my suggestions to the letter.

There is no scarlet fever in the convent, and Dr. Brannen says there has been none. He did not see the case that Dr. Smith called scarlet fever. Dr. Hackett, a well-known physician of that section, who saw the case in consultation, pronounced it German measles.

Very respectfully
BAXTER T. SMELZER

NORTH LAWRENCE, N. Y., *March* 30, 1901

*To the State Department of Health, Albany, N. Y.:*

Dear Sir—Regarding the recent cases of pseudo and true diphtheria in vicinity of and in Brasher, which were under my charge. I beg to report:

1 As far as the convent of St. Joseph is concerned, there were no cases prior to and for 10 days following the discovery of a case of sore throat, diagnosed after a few days as diphtheretic, some miles outside of Brasher Falls. This was the first case of sore throat in vicinity to my knowledge and which was of a serious nature, one of the cases of the family terminating fatally.

Here is a fact worth noting in the report on scarlet fever which you received, insinuating the cause or nidus of infection to have been St. Joseph's academy. The convent authorities were not notified of the fact that all the scholars frequenting the school had possibly been exposed or to the probability of the building itself being the source of infection. It is my humble opinion had this been done some cases might have been prevented.

There were a series of cases at the Mahanny's that had been diagnosed as scarlet fever.

Later a case developed in Lawrence in my territory and I was called. I diagnosed a malignant type of dyphtheria. This case was a day scholar frequenting same school as the Mahanny case.

Three days following the outset of this case I was called to St.

Joseph's academy to a case of sore throat with grave constitutional symptoms. No visible membrane in throat or fauces as examined with a laryngoscope.

Owing to absence of bacteriological facilities to the prevalence of diphtheria and to the possibility of her having been exposed, I immediately isolated patient and quarantined one side of building. The day school had been dismissed indefinitely some days previously. The boarders were closely confined to limits. Health officers examined building and patient and pronounced case of simple angina. Constitutional symptoms looked suspicious, so I treated case as diphtheritic and looked to preparing facilities for handling any real cases that might arise. I gave antitoxin, 3000 units, and cases rapidly improved.

Almost simultaneously a second case developed, of a serious nature, and a third of a very mild type.

All were given antitoxin as a precautionary measure. These cases became early convalescent.

2 On March 12th I was called in consultation with Smith, M. D., to the house of J. R. Donovan, of Brasher Falls. This case was stricken March 8th or 9th, and I think diagnoses made to the family on the morning of 12th—a case of diphtheria. Quarantine was immediately made by Dr. Hazen. Case died March 16th.

3 In defense of my cases and the reputation of the convent in Brasher, I must say we date our first case of true diphtheria to the indiscretion of parties visiting the convent March 7th, having been in attendance on the above fatal case.

March 19th a case of malignant diphtheria developed and was quarantined by me. The case was telegraphed to board of health and Dr. Hazen immediately publicly quarantined building. March 20th a second case developed. Every precaution was taken to prevent spread of the infection and our efforts were rewarded.

Antitoxin was used as a prophylactic, 250 units. No more cases developed, and all cases now are well but strictly confined, and will be for some weeks. Formaline and sulphur have been used to disinfect. All clothing in direct contact destroyed—burned.

4 The first case of infection in this locality, Brasher, seems plausibly to me to have been one of the Mahanny family who returned from Malone, a then infected town, to her home in Brasher. Members, sisters, of this case attended the academy and boarded at a Mr. Desmond's in Brasher. The Desmond child complained much of sore throat at this time, i. e., long before a case of diphtheria or scarlet fever was diagnosed.

5 I positively assert I attended no case of sore throat previous to the time cases were being treated in vicinity by local (Brasher) doctors, nor for some time after.

Sincerely yours

DR. J. P. BRANNEN.

# VILLAGE OF FULTONVILLE

## Diphtheria

DANIEL LEWIS, M. D., *Commissioner State Department of Health, Albany, N. Y.:*

Dear Sir—In accordance with your recent instructions to visit Fultonville, N. Y., and investigate the conditions there complained of by a number of its citizens, on the 11th and 12th instants a thorough examination of the locality was made. It is an old village upon the Mohawk, opposite Fonda, and claims about 1200 population. Has no village board of health and depends for sanitary guidance upon Dr. Burt, town health officer, who lives at Glen, some five miles distant. Sanitary matters have been utterly ignored and as a result of such negligence and carelessness, it is not surprising that much sickness has been the result—malarial and typhoid fevers, malignant sore throat and 16 cases of diphtheria during the past nine months, with three deaths. I found the school had been closed for some time, and recommended that the school building be disinfected with formaldehyde and assisted the health officer on the 12th instant in

making a thorough and complete one by the Mulford process. The supervisor, president of the village, town health officer, village physicians and the town officials were advised of the necessity of a new water supply and a modern sewer system. The appointment of a village health board and the requiring of their health officer to make a general and thorough monthly inspection of the privies, wells and dwellings, and that the village be kept in modern sanitary condition was advised.

These local conditions have existed for a long time and were undoubtedly the cause of the epidemic.

Yours respectfully

B. T. SMELZER

*Medical expert*

## VILLAGE OF DE RUYTER

### Scarlet fever

DE RUYTER, N. Y., *March* 18, 1901

*State Board of Health, Albany, N. Y.:*

Gentlemen—Will you kindly give us the method of procedure to compel a local board of health to take steps to hold in check a scarlet fever epidemic. Our health officer says we have this disease yet nothing is done. No quarantining, no disinfecting upon recovery. School in session and the disease spreading daily. Can you come to our relief?

Yours truly

M. A. BLAKESLEE

WAVERLY, N. Y., *March* 23, 1901

DANIEL LEWIS, M. D., *Commissioner State Department of Health, Albany, N. Y.:*

Dear Doctor—Agreeably to your instructions of the 20th instant to visit De Ruyter, Madison county, for the purpose of investigating the complaint of Mr. Blakeslee, and, if founded on facts, to give the necessary instructions to the health officer

looking to the abatement of the epidemic, I herewith submit tl following report of my investigation:

March 22, 1901, attended a meeting of the town board ( health of De Ruyter, held in the office of H. D. Preston, in tl village of De Ruyter. Majority of health board present, inclu ing the acting health officer for the village, Dr. C. P. Monr The village of De Ruyter is an incorporated village containir 700 inhabitants. The trustees-elect of 1900 made the necessa appointments to organize a board of health for the village, wl failed to qualify; thus the village of De Ruyter was witho a duly organized board of health. The health officer of tl town board of health, Dr. C. P. Monro, a resident of the villa of De Ruyter, has been delegated to act as health officer for tl village, and is now acting in that capacity, with the purpose ( continuing to act until the new board of trustees, recent elected, hold their meeting to organize and make suitable a pointments to establish a board of health for the village. Tl first record of the epidemic located in the village of De Ruyt September 26, 1900, was reported by acting health officer Monr The patient was a young lad suffering from an eruption of mi type, regarded by the medical attendant as measles, owing the prevalence of a subsiding epidemic. The lad was soon abo the streets mingling among the people. The health officer Otselic on the occasion of a visit to De Ruyter noticed the boy desquamative condition and gave a diagnosis of it as havi been scarlet fever, remarking more would follow. The same b made a visit to the city of Cortland and observed by one of tl city physicians to have had scarlet fever, was directed to imm diately return to his home in De Ruyter. The next case r ported was in adjoining town of Cuyler October 13, 1900. Heal officer Monro of the town of De Ruyter, visited the case, a l of 12 years, and reported the case to Health officer Van Hous of the town of Cuyler, who confirmed the diagnosis of scarl fever, and quarantined the patient. Four other members of tl family contracted the disease with one death resulting, a b six years of age. This seems to be the only death report *during the* epidemic. During the period of convalescence a

of desquamation the children were granted permission
n to school in De Ruyter. The board of education re-
eir admission and caused the pupils to return to their
r a period of two weeks, terminating January 2, 1901.
ervening time, it is stated, proper quarantine and sani-
cautions were not observed. From reliable statements
appears many cases were without medical attendance
rvation. The epidemic was very light, in most cases
a few days, with parental permission to go out at
. In this way and other neglected precautions the dis-
s been thoroughly disseminated throughout the com-
It is thought by the health board and health officer the
has expended its force and about subsided. Through
tesy of acting health officer Monro of the village I was
to visit with him a family of three children who were
scing from the disease. They were up around the house,
different stages of well-defined desquamation resulting
arlet fever. In view of the information received from
ng health officer of De Ruyter and others, coupled with
tion made of cases visited by myself, I regard the com-
f Mr. Blakeslee founded on facts, and accordingly gave
essary instructions to the acting health officer looking
ibatement of the epidemic.

Very respectfully

WM. E. JOHNSON

*Secretary State Department of Health*

## VILLAGE OF PHILMONT

### Typhoid fever

ALBANY, N. Y., *March* 19, 1901

LEWIS, *State Commissioner of Health:*

Sir—At Philmont within a few weeks there has been a
outbreak of typhoid fever, 20 or more cases having
d of which several have been fatal. All nearly have been

employees of a knitting mill, the majority being women operatives. The cases developed suddenly, most of them during the first 10 days, and there have been few new cases recently. The mill has stopped work, for the operatives have left it through fear of infection.

I find no reason to suspect the mill itself of being the source of the outbreak. Without going into detail of my inspection of it to-day I will only say that it appears to be in good sanitary condition. It is a cotton knitting mill, well built, four stories high, furnishing employment for between 300 and 400 people. New cotton is used, and is put through the processes necessary for making knit undergarments. It is fairly clean; it has plumbing to limited amount for closets and wash basins, all properly trapped and flushed, and the drain discharges into an open creek. There is nothing about the work, the care of the building or the condition of its waste discharges which would be likely to or could be a source for such an outbreak. Moreover, the nature of typhoid infection and its manner of propagation are not along the line of such an origin; that is, it is not a disease spreading from infected air.

On the contrary, as we well know, typhoid fever is contracted by having its germs taken into the body through the stomach; people take the disease, not by breathing an infected air, but by eating or drinking an infected food or drink. As water is the chief article taken into the stomach without cooking the heat of which would destroy any possibly contained germs, it is the chief suspected cause of the disease. Other occasional media for its development, such as milk, raw oysters and the like, I think there is no reason to suspect here in Philmont. But the health officer, Dr. Woodruff, showed me a well near the mill which he had condemned and closed as suspicious, and I have no doubt that he was quite right, and it is entirely probable that the outbreak arose entirely from it. It is situated so as to readily receive soil washing at the bottom of a declivity; a street drain runs within a few feet of it; this soil is all underlaid with slate rock and in this very village we found some

years ago a well in direct communication with a vault several hundred feet distant by means of the dip and cleavage of this slate rock. To account for the fulminant character of the outbreak, the weather perhaps may have served, since a fortnight or so before its onset there was soft weather and thaw, I am told. The suddenness of onset was notable, but I found no new element coming in at an appropriate time to affect the conditions about the mill or about any other possible source so far as I could learn by inquiry. I have taken steps toward the suitable analysis of the water of this well, which may throw light on our inquiry. But since there have been few cases after discontinuance of its use, since it was in common use by those having the disease, one person at least as I was told having typhoid fever who drank this water but did not work in the mill, and especially since the burden of the cause of typhoid fever always rests upon the potable water, I do not hesitate to condemn the well as the health officer has already done. The village has a public water supply from a remote and pure source, which the people would do wisely to use and discontinue all wells in this questionable soil.

Very respectfully

F. C. CURTIS, M. D.

BENDER HYGIENIC LABORATORY

ALBANY, N. Y., *March* 28, 1901

DANIEL LEWIS, M. D., *Commissioner State Department of Health, Albany, N. Y.:*

Dear Sir—We have examined bacteriologically the sample of drinking water recently submitted from the town of Philmont, N. Y., and would report as follows:

Number of bacteria to the cubic centimetre on agar plates, 2500; on gelatin plates, 9080; average number of bacteria per cubic centimetre, 5790.

Theobald Smith's test.—Ten fermentation tubes were each inoculated with one cubic centimetre of the water. All of these contained gas. In five of them the gas was between 30 and 50

employees of a knitting mill, the majority being women operatives. The cases developed suddenly, most of them during the first 10 days, and there have been few new cases recently. The mill has stopped work, for the operatives have left it through fear of infection.

I find no reason to suspect the mill itself of being the source of the outbreak. Without going into detail of my inspection of it to-day I will only say that it appears to be in good sanitary condition. It is a cotton knitting mill, well built, four stories high, furnishing employment for between 300 and 400 people. New cotton is used, and is put through the processes necessary for making knit undergarments. It is fairly clean; it has plumbing to limited amount for closets and wash basins, all properly trapped and flushed, and the drain discharges into an open creek. There is nothing about the work, the care of the building or the condition of its waste discharges which would be likely to or could be a source for such an outbreak. Moreover, the nature of typhoid infection and its manner of propagation are not along the line of such an origin; that is, it is not a disease spreading from infected air.

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years ago a well in direct communication with a vault several hundred feet distant by means of the dip and cleavage of this slate rock. To account for the fulminant character of the outbreak, the weather perhaps may have served, since a fortnight or so before its onset there was soft weather and thaw, I am told. The suddenness of onset was notable, but I found no new element coming in at an appropriate time to affect the conditions about the mill or about any other possible source so far as I could learn by inquiry. I have taken steps toward the suitable analysis of the water of this well, which may throw light on our inquiry. But since there have been few cases after discontinuance of its use, since it was in common use by those having the disease, one person at least as I was told having typhoid fever who drank this water but did not work in the mill, and especially since the burden of the cause of typhoid fever always rests upon the potable water, I do not hesitate to condemn the well as the health officer has already done. The village has a public water supply from a remote and pure source, which the people would do wisely to use and discontinue all wells in this questionable soil.

Very respectfully

F. C. CURTIS, M. D.

BENDER HYGIENIC LABORATORY

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DANIEL LEWIS, M. D., *Commissioner State Department of Health, Albany, N. Y.:*

Dear Sir—We have examined bacteriologically the sample of drinking water recently submitted from the town of Philmont, N. Y., and would report as follows:

Number of bacteria to the cubic centimetre on agar plates, 500; on gelatin plates, 9080; average number of bacteria per cubic centimetre, 5790.

Theobald Smith's test.—Ten fermentation tubes were each inoculated with one cubic centimetre of the water. All of these contained gas. In five of them the gas was between 30 and 50

per cent, and the hydrogen and carbonic acid gas was in the ratio characteristic of the colon bacillus. Aside from the presence of the colon bacillus, merely the usual water bacteria were detected. The typhoid bacillus was not found.

Remarks—This water must be regarded as a dangerously polluted water. The bacterial count is entirely too high, and the presence of the colon bacillus in the proportion of one organism to each two cubic centimetres of water indicate a high degree of organic contamination. It could hardly be expected that the typhoid bacillus would be isolated in a water containing such large numbers of colon bacilli on account of the well-known antagonism which exists between the two organisms. The presence of the colon bacillus, however, would suggest very strongly the possibility that such water was capable of causing typhoid fever.

Respectfully submitted.

GEORGE BLUMER
*Director*

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# EAST DURHAM

## Typhoid fever

GREENVILLE, N. Y., *July* 29, 1901

DANIEL LEWIS, *Superintendent:*

Dear Doctor—I wrote the Department of Health about 10 days ago in relation to typhoid fever at East Durham. Have learned nothing from it. The source of infection seems to come from one or two wells, and I think the water from those wells should be tested for typhoid bacillus. The town board has re-organized, but are doing absolutely nothing in the matter. Kindly inform me if samples of water are sent your Department, if they will be tested.

Fraternally,
CHARLES P. McCABE

ALBANY, N. Y., *July* 30, 1901

CHAS. P. MCCABE, M. D., *Greenville, N. Y.:*

Dear Sir—In reply to your communication of the 29th instant, you are informed that two bottles with the necessary instructions have been sent you that you may procure samples of water from wells you refer to as possible sources of typhoid fever. When the samples are received at the Bender laboratory they will be examined.

While the bottles have been sent to you by express, it is advised that you send the samples of water by mail that there may be the least possible delay in making the bacteriological examinations.

That this Department may take the proper action should the samples of water show contamination, you are requested to furnish us with the names of the parties on whose premises the wells are located.

Very respectfully

DANIEL LEWIS

*Commissioner of Health*

BENDER HYGIENIC LABORATORY

ALBANY, N. Y., *August* 6, 1901

DANIEL LEWIS, M. D., *Commissioner State Department of Health, Albany, N. Y.:*

Dear Sir—Report on the examination of water from Greenville, Greene county, N. Y.:

*Sample 1, Marked "Story"*

Number of colonies per cubic centimetre, 8100.

Fermentation test.—Six tubes were each inoculated with one cubic centimetre of water. All but one showed the formation of gas, and in one of the six the type of gas corresponding to the bacillus coli communis.

*Specimen 2, marked "Paddock"*

The number of colonies on agar plates was 60,000.

Fermentation test.—Six tubes were inoculated with one cubic centimetre of water, and all showed the formation of gas, and

in one tube the production of gas corresponded to that of the bacillus coli communis.

Remarks—No. 1 on account of its gas production is deemed unfit as a drinking water, and might possibly produce typhoid fever. Specimen No. 2 has an excessively high bacterial count, and also shows evidences of contamination in its gas production, and is therefore deemed unfit as a drinking water.

Respectfully submitted.

GEORGE BLUMER
*Director*

ALBANY, N. Y., *August* 8, 1901

L. SAFFORD, M. D., *Health Officer, East Durham, N. Y.:*

Dear Sir—I send you herewith enclosed copy of Dr. Blumer's report on the examination of two samples of water from Greenville, Greene county, N. Y.

In view of Dr. Blumer's report it is advised that the use of the water from the wells mentioned in said report be absolutely prohibited for drinking purposes.

Very respectfully
DANIEL LEWIS
*Commissioner of Health*

## REPORTS OF INSPECTORS AT BARREN ISLAND AND CHEEKTOWAGA

NEW YORK, *January* 22, 1902

DANIEL LEWIS, *Commissioner of Health, Albany, N. Y.:*

Sir—I have the honor to herewith render report for the year 1901 as inspector at Barren island.

A notable feature of the year is the lack of complaints from residents of neighboring localities, but one formal complaint having been forwarded to me from your Department for investiga-

tion. This came from Cedarhurst and was found to be groundless, owing probably to a mistake on the part of the complainant as to the source of the odor complained of.

The prevailing direction of the wind during the summer months was easterly, thus favoring the locality from which complaints have mostly come in former years, and the lack of organized opposition may account for the lack of complaints from residents in the other direction, for it must be admitted that odors more or less unpleasant are still at times caused at Barren island, and frequently during the season were noted in that rapidly growing section of Brooklyn lying between the old city and the sea.

While there were no formal complaints from this section, considerable annoyance was caused by these odors. As the population increases this dissatisfaction will probably take the form of organized opposition to Barren island unless the cause is removed. The fact that the nature of these odors is less noxious than in former years will not count in this matter. The abatement must be practically complete.

This view of the matter has been brought to the attention of the superintendent of the factories on the island.

The Sanitary utilization company is undoubtedly the chief offender. Their process of garbage disposal is the best known aside from this question of odors, but its permanency depends upon the solution of the problem. It is only fair to them to say that the uncertainty of the renewal of their contract with the city prevented their entering into any extensive plans of improvement, and that they were careful and painstaking in the conduct of their work. During the year there was frequent trouble with the salt-water supply owing to the clogging by seaweed at the point of intake, rendering the condensers inoperative for the time. This is to be remedied by the removal of the intake to a point beyond the breakwater northeast of the plant.

An additional high-pressure pump is to be added, insuring an abundance of water at all times. An additional well has been

sunk to supply fresh water for the boilers, the supply from one well having proved at times inadequate. Experiments made during the season have shown that drying by hot air is much better in every way than the old method of drying by steam and it is to be adopted, a building for the purpose being already under construction. This will result in a great reduction in the amount of escaping odors, most of the gases being consumed in the process, the escaping vapor to be conducted through a scrubber.

There were several severe cases of typhoid fever among the officials at this plant during the summer, one of whom, Mr. Shevlin, the superintendent, died early in September. The present superintendent, Mr. Blount, a graduate of Annapolis, is a thoroughly capable man. All things considered, I think the prospect of a successful season in 1902 is good.

The yield of products at this plant was greater than in previous years, and a more systematic and economical management in all departments has been the rule. The season at the factories for the disposal of dead animals and offal has been a very busy and successful one in every respect, more material having been utilized than in any previous year. Both factories have been carefully managed and are fully equipped with the best sanitary appliances for the control of odors.

At McKeever's the local conditions are not quite as good as they should be, but when certain changes which are planned are carried out, it will be like White's—a model factory of its kind.

Of the fertilizer and acid plants of the E. Frank Coe company there is little to be said. As now managed there is no cause for complaint at any time of the year; no changes affecting sanitary conditions were made or needed during the year unless I except an electric plant by which the entire works are thoroughly lighted. The general improvements of the island have been remarkable, evidenced especially by the appearance and bearing of the people, especially the children, who formerly ran wild over the island like savages; the credit for this is due mainly to the church, the school and the police station. From the middle of

ıne to the middle of September I visited the island weekly; at her times fortnightly.

Respectfully submitted.

ORVILLE LEWIS
*Inspector*

## EPORT ON THE RENDERING AND GARBAGE WORKS OF CHEEKTOWAGA FROM APRIL 1, 1901, TO JANUARY 1, 1902

The Baynes garbage and reduction works commenced busiess in the new plant on July 8, 1901, and from that date to ecember 31st have disposed of 13,333 tons of garbage. They ave 18 dryers which they use for the disposal of garbage and mploy 45 men at the works, and are receiving from 20 to 30 ons of garbage less a day from the city of Buffalo than they id two years ago, owing to some irregularities in the collection f same. They are very much put out about it, for they have plant with a capacity of disposing of about 150 tons per day. hey have a complete factory and are disposing of the garbage ı a sanitary as well as in a practical way. The plans and specications as well as the regulations laid down by the State oard of Health have been carried out completely. They have our steam boilers of 125 horse-power each, six engines of varius sizes, six steam pumps, four extractors for extracting grease nd have invested about $35,000 in their works.

The Milsom works started business on April 11, 1901, with heir new plant and have 10 rendering tanks, four storage tanks, our dryers, three engines, four boilers and employ 54 men. 'his new rendering plant is complete in every detail and is carrying out the regulations laid down by the State Board of Health n a very satisfactory way. They have about $50,000 invested in he works, and have I think one of the best equipped plants for he disposal of dead animals there is in the country. They have disposed of 10,100 animals and 3840½ tons of animal substance from May 1 to December 31, 1901.

The Fechter works have not changed much in the past nine months, though the business has greatly increased, owing in part I think to the Milsom works belonging to a so-called trust. The works will have to have a complete overhauling, as they are not large enough now to dispose of the animals and material they are receiving. They have three tanks and one dryer. I am in hopes that ere long they will be in a position to enlarge the place so as to dispose of the material in a sanitary manner. They have paid out nothing for improvements in the past several months, and I should judge their business has doubled.

Betz Bros.' factory has three tanks, two dryers and employ six men. They are doing a nice little business and keep the place fairly clean. They do not handle many dead animals, their business being confined strictly to offal collected from the butchers There has been no money expended in this plant for improvements in the past year.

JOHN T. CLARIS
*Inspector*

# FOOD AND DRUGS

# REPORT

OF

## WILLIS G. TUCKER, M.D. Ph.D.

### Director Bureau of Chemistry, New York State Department of Health

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DANIEL LEWIS, M. D., *Commissioner New York State Department of Health, Albany, N. Y.:*

Sir—During the year ending December 31, 1901, 46 samples of water from various parts of the state, and mostly sent by local boards of health, have been analyzed and a variety of articles which have been submitted to me from time to time have been examined. Many matters of minor importance which have been referred to me have received attention and numerous inquiries concerning food and drug adulteration, illuminating oils, water supply and pollution, analytical methods and kindred matters have been answered and the desired information supplied. Through lack of funds available for the purpose no extended investigations have been undertaken, and since April 1st and after the reorganization of the Department, only such chemical work as has been specifically ordered has been performed. A summary of the work done during the year is now transmitted as follows:

January 4. Reported on analysis of water discharged from beet-sugar factory at Clyde, and sample of water from the Clyde river, received from Forest, fish and game commission December 10, 1901, and ordered analyzed December 11.

January 16. Received five samples of water from board of health, Cortland. Ordered examined January 18. Analyzed and reported on February 1.

January 17. Received sample of water from Daniel Delehanty, governor Sailors' snug harbor, New Brighton, Staten island. Ordered examined January 18. Analyzed and reported on January 23.

January 19. Received three samples of water from board of health of Belmont. Ordered examined January 23. Analyzed and reported on February 1.

March 4. Received sample of ice from Curtis pond, sent by Dr. A. H. Brown, health officer, Auburn. Ordered examined March 5. Analyzed and reported on March 13.

April 11. Received from office State Department of Health two samples of water marked "Lake" and "Spring water." Ordered examined same day. Analyzed and reported on April 17.

April 18. Received sample of fluid described as "a sample of a preparation of the St James society for drug addictions," with instructions to examine same. Reported on May 18 as follows:

DANIEL LEWIS, *Commissioner New York State Department of Health:*

Dear Sir—On April 18 I received from you a package containing two eight-ounce bottles of fluid stated to be a "sample of a preparation of the St James society," with a statement concerning the same, and request that an examination of the fluid be made. In conformity with these instructions I beg to report as follows:

The package as I received it contained two eight-ounce bottles, separately wrapped in brown paper and contained in cardboard cases, and both enclosed in a thick cardboard box. Neither the bottles, wrappers nor outer box bore labels or marks of any kind, nor was any printed matter attached to or contained in the package.

The bottles were filled with liquid of a reddish-brown color containing considerable sediment. Its odor was faintly alcoholic. Taste bitter. Specific gravity at 15 degrees C., 1.0078. It contained 8.90 per cent by weight of alcohol, equivalent to 11.05 per cent by volume. On evaporation it yielded 8.79 per cent of residue when dried at 110 degrees C., and this residue was of a syrupy consistence and had a dark brown color. On incineration it yielded .105 per cent ash, equivalent to .009 per cent of the original liquid, showing the absence of more than

a very minute amount of mineral, or non-volatile, matter. This residue, obtained by evaporation, consisted largely of glycerin, of which the original liquid was found to contain about 5 per cent. On examination it was found to contain morphine, and when subjected to the method of assay prescribed in the U. S. Pharmacopoeia for tincture of opium, 100 cubic centimeters of the original liquid yielded 1.049 grams of morphine.

Very respectfully
WILLIS G. TUCKER
*Director*

May 20. Received sample of water from Dr. J. C. Ladow, health officer, Mechanicville. Ordered examined May 20. Analyzed and reported on May 25.

May 20. Received sample of water from Dr. L. A. Bromley, Granville. Ordered examined May 20. Analyzed and reported on May 25.

May 30. Received from office State Department of Health a sample of quinine tablets for examination. Examined and reported on as follows:

ALBANY, N. Y., *June* 12, 1901

DANIEL LEWIS, *Commissioner New York State Department of Health, Albany, N. Y.:*

Dear Sir.—On May 30 I received from you a sample of two-grain sulphate of quinine pills (or tablets) said to have been made by Henry Thayer & Co., of Cambridgeport, Mass., and received from Dr. A. L. Hall, of Fulton, N. Y., of which you directed that an examination should be made. The pills were disk-shaped, double convex and chocolate coated, and in this condition had an average weight of 3.79 grains. An average of three assays gave 2.165 grains of quinine sulphate per pill, the quinine corresponding to the pharmacopoeial tests for identity and purity. The pills are therefore of good quality.

Very respectfully
WILLIS G. TUCKER
*Director*

June 14. Received two samples of water from Hon. J. F. Ahearn, Troy. Ordered examined June 15. Analyzed and reported on June 19.

June 18. Received sample of water from Mr. M. B. Fellows school trustee, Howe's Cave, by order Dr. H. F. Kingsley, health officer, town of Schoharie. Ordered examined June 19. Analyzed and reported on June 22.

June 20. Received sample of water from Mr. Edward C. Buchenau, secretary board of health, Clarkstown. Ordered examined June 19. Analyzed and reported on June 22.

July 10. Received by express from New York city a sample of vanilla extract. Ordered examined July 9. Examined and reported on August 1, as follows:

DANIEL LEWIS, *Commissioner New York State Department of Health, Albany, N. Y.:*

Dear Sir—On July 10 last I received by express under your instructions a package containing a four-ounce bottle referred to in your communication to me of July 8 as containing "supposed vanilla extract," with directions to examine the same. No labels or other marks were attached to the bottle nor did any accompany it.

The fluid has a brown color and vanilla-like odor. On analysis it yields of

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|---|---|
| Vanillin | 0.028 per cent |
| Coumarin | 0.011 per cent |
| Alcohol (by weight) | 4.750 per cent |
| Total solids | 12.320 per cent |

and it is apparently colored by caramel.

Very little "extract" or "essence" of vanilla is now made from the vanilla bean and the *National formulary* gives a formula for "compound tincture (or compound essence) of vanilla" containing vanillin, coumarin, alcohol, glycerin, syrup, compound tincture of cudbear and water. The U. S. Pharmacopoeia contains a tincture of vanilla made from the bean, but the flavoring article sold in the stores does not pretend to be, nor it is required by law to be, of this strength or quality, nor is it sold or known as a tincture. Therefore at the present time we have no standard of quality for this article in this state and the same is, of course, true of many other similar food articles or adjuncts. The state board of health of Massachusetts has examined a large number of "vanilla extracts" but has made public no standard of strength or quality so far as I am aware. The article now reported upon contains as much or more vanillin than did 28 out of 68 samples reported by the Massachusetts board in 1899. It contains about one-quarter as much vanillin as was found to be present in an

article manufactured and sold for household use by one of the leading druggists of Albany. I should consider it an article of inferior quality in that it is deficient in strength, but not because of the presence of any objectionable constituent. The coloring matter added is entirely harmless and very commonly employed in the preparation of such extracts. As usual in such cases the important constituents only have been determined.

Very respectfully

WILLIS G. TUCKER

*Director*

July 11. Received two samples of water from Mr. G.E. Rogers, secretary board of health, Fort Edward. Ordered examined July 12. Analyzed and reported on July 16.

July 12. Received sample of water from Dr. A. M. Burt, health officer, Glen. Ordered examined July 12. Analyzed and reported on July 16.

July 18. Received from office of State Department of Health two samples of water from Chenango, with instructions to examine same. Analyzed and reported on July 23.

August 16. Received from Dr. M. J. Stearns, Massena, a sample of granulated sugar which was thought to have occasioned illness in a family using it, of which an examination was directed. The sugar was found to be of good quality and free from any evidence of the presence of any mineral poison or foreign matter of any kind so far as observed. Reported on same August 29.

August 17. Received from office of the State Department of Health a sample described as consisting of "unrefined milk-sugar" of which an examination was directed for the purpose of determining whether it contained free hydrochloric acid. Examined and reported September 9 that it contained no such free acid.

August 28. Received sample of water from Dr. Horace Babcock, health officer, Gowanda. Ordered examined August 29. Analyzed and reported on September 4.

August 30. Received a sample of water from Dr. W. P. Spratling, superintendent Craig colony, Sonyea, of which an examination was ordered on same day. Analyzed and reported on September 4.

September 11. Received from office State Department of Health a small vial containing a liquid described as a "preparation for external application for lupus," of which an examination was directed. The quantity submitted was too small to admit of satisfactory analysis but it was examined and reported on November 15. It consisted essentially of an aqueous solution of carbolic acid apparently containing some glycerin, and holding in suspension an insoluble powder consisting chiefly of oxide of zinc, making up when deposited about one-fourth of the bulk of the fluid and flavored with oil of rose.

September 12. Received sample of water from Dr. W. T. Jones, health officer, Alpine. Ordered examined September 13. Analyzed and reported on September 16.

September 17. Received sample of water from Dr. A. H. Getty, health officer, Athens. Ordered examined September 18. Analyzed and reported on September 20.

September 30. Received sample of water from Dr. H. D. Wey, health officer, Elmira. Ordered examined October 1. Analyzed and reported on October 10.

October 1. Received two samples of water from Mr. Pierre Becker, health inspector, Rome. Ordered examined October 3. Analyzed and reported on October 10.

October 3. Received sample of water from Dr. J. W. King, health officer, Stockport. Ordered examined October 4. Analyzed and reported on October 10.

October 12. Received four samples of water from Dr. T. J. Cleland, New Lebanon. Ordered examined October 22. Analyzed and reported on October 28.

October 28. Received sample of water from Dr. C. B. Bacon, health officer, Waterloo. Ordered examined October 31. Analyzed and reported on November 8.

October 29. Received sample of water from Mr. Perry R. Bartram, secretary board of health, Fredonia. Ordered examined October 31. Analyzed and reported on November 8.

November 10. Received two samples of water from Dr. A. O. Bogert, health officer, Nanuet. Ordered examined November 9. Analyzed and reported on November 18.

November 11. Received sample of water from Mr. J. K. Chandler, secretary board of health, Moravia. Ordered examined November 9. Analyzed and reported on November 18.

November 13. Received two samples of water from Dr. F. W. St John, health officer, Charlton. Ordered examined November 14. Analyzed and reported on November 23.

November 13. Received from Dr. A. H. Getty, health officer, Athens, six samples of water taken from an excavation before and after the addition of salt to the contents of an adjoining cesspool for the purpose of determining whether leakage from the cesspool takes place. The samples were taken under instructions from this laboratory and were examined and subsequently reported on as follows:

ALBANY, N. Y., *November* 19, 1901

DANIEL LEWIS, *Commissioner New York State Department of Health, Albany, N. Y.:*

Dear Sir—On September 20th last I reported to you upon the analysis of a sample of water received on September 17th from Dr. A. H. Getty, health officer, Athens, N. Y. It subsequently appeared that the water, concerning which no particulars were furnished me at the time the sample was sent, had been taken from "an excavation made in the ground near the home of Capt. H. Lanfare, who alleges that dampness and water in his cellar are caused by leakage from a privy vault on the premises of his neighbor," and that the object of the examination had been to determine if possible whether the water submitted contained sewage, Dr. Getty being of opinion that the water was surface water. I promptly advised you that it would be impossible to answer this question from the analytical results of a single sample of the water and recommended adding salt to the privy vault the seepage from which was alleged to be the cause of the difficulty, and testing samples of the water from the excavation taken before and after the addition of the salt, because if it could be shown that the quantity of salt in the water in the excavation had been materially increased after the addition of salt to the contents of the vault it would be fair to assume that the contents of the vault had percolated through the ground and passed into the excavation. On September 27th I sent to you full directions for making this test in a satisfactory manner, and these directions were forwarded to Dr. Getty for his information, and he subsequently made the tests as advised, and

on November 13th sent to me six samples of water of which three were taken from the excavation on October 19th, 23d and 27th, and before adding the salt to the vault, and three were taken from the same excavation on November 1st, 4th and 8th, and after the addition of the salt to the vault. Salt is freely soluble and readily diffusible and my instructions were to add several hundred weight to the contents of the vault, together with sufficient water to dissolve the same, and cause it to diffuse through the contents of the vault. If there be direct communication between the vault and the excavation the salt should appear in the water of the latter. The sample of water originally examined contained 10.80 parts of chlorine per 100,000 and in the three samples subsequently sent me and taken from the excavation before the salt was added to the vault I find 21.20, 21.20, and 22 parts of chlorine per 100,000 respectively. In the three samples of water taken from the excavation after the addition of the salt to the vault I find 2.40, 24 and 24.40 parts of chlorine per 100,000 respectively. The quantity is larger and shows an apparent increase, but it is to be observed that the quantity of chlorine in the water from the excavation is twice as large in October as it had been in September, and that the samples taken before the addition of the salt to the vault showed an increased amount of chlorine. Under these circumstances I do not think that the comparatively small increase from a maximum of 22 per 100,000 to a maximum of 24.40 is sufficient to demonstrate the communication between the vault and the excavation which has been alleged to exist. Should it be thought that these tests are insufficient to establish or to disprove such connection it would be practicable to continue them, but it seems to me evident that since the content of chlorine in the water in the excavation increased nearly 100 per cent within a month's time, *and before any salt had been added to the contents of the vault*, it would be entirely unsafe to assert that an increase of about 15 per cent in three weeks must be the result of diffusion of the brine from the vault into the excavation. In my opinion therefore the tests fail to establish the fact of communication between the vault and the excavation, but should they be deemed insufficient it will be an easy matter to continue them, and should you so direct I will propose a plan for the continuation of the experiment.

Very respectfully yours

WILLIS G. TUCKER

*Director*

November 15. Received a sample of water from Dr. J. L. Hanmer, health officer, Middletown. Ordered examined November 16. Analyzed and reported on November 23.

December 13. Received a sample of water from Dr. E. R. Osterhout, health officer, Trumansburg. Ordered examined December 18. Analyzed and reported on December 27.

## WATER ANALYSES

During the year 46 samples of water, mostly of drinking water, have been received and analyzed as hereinbefore stated. The usual sanitary analysis has been made, which has included physical properties (color, turbidity, sediment and odor); chlorine in chlorides; free and albuminoid ammonias; nitrogen in nitrites; nitrogen in nitrates; total solids; loss and behavior on ignition, and mineral matter, with such other special determinations as may have been deemed necessary in special cases. For determining fitness for domestic use these results have been sufficient in most instances. To all senders of samples the following instructions have been issued in advance, and in construing the analytical results the information which has been furnished as to the source of the sample, surroundings and possible contaminations has been given due weight in deciding upon quality and advising as to use, and this fact may explain some of the conclusions which might otherwise seem to be scarcely justified if the analytical results are considered:

NEW YORK

STATE DEPARTMENT OF HEALTH

ALBANY

CHEMICAL ANALYSIS OF WATER

---

DIRECTIONS FOR TAKING AND FORWARDING SAMPLES OF WATER

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1. Use clean *glass* demijohns of gallon capacity. *Never use stone jugs.*
2. Rinse the demijohns thoroughly several times with the water before filling.
3. Fill with a fair sample of the water to be analyzed, and if dippers, funnels or other vessels are used, see to it that these are clean.
4. Close with a *new and clean cork* which should be well tied down with cord. The ends of the cord may be sealed, but top should not be coated with wax.

on November 13th sent to me six samples of water of which three were taken from the excavation on October 19th, 23d and 27th, and before adding the salt to the vault, and three were taken from the same excavation on November 1st, 4th and 8th, and after the addition of the salt to the vault. Salt is freely soluble and readily diffusible and my instructions were to add several hundred weight to the contents of the vault, together with sufficient water to dissolve the same, and cause it to diffuse through the contents of the vault. If there be direct communication between the vault and the excavation the salt should appear in the water of the latter. The sample of water originally examined contained 10.80 parts of chlorine per 100,000 and in the three samples subsequently sent me and taken from the excavation before the salt was added to the vault I find 21.20, 21.20, and 22 parts of chlorine per 100,000 respectively. In the three samples of water taken from the excavation after the addition of the salt to the vault I find 2.40, 24 and 24.40 parts of chlorine per 100,000 respectively. The quantity is larger and shows an apparent increase, but it is to be observed that the quantity of chlorine in the water from the excavation is twice as large in October as it had been in September, and that the samples taken before the addition of the salt to the vault showed an increased amount of chlorine. Under these circumstances I do not think that the comparatively small increase from a maximum of 22 per 100,000 to a maximum of 24.40 is sufficient to demonstrate the communication between the vault and the excavation which has been alleged to exist. Should it be thought that these tests are insufficient to establish or to disprove such connection it would be practicable to continue them, but it seems to me evident that since the content of chlorine in the water in the excavation increased nearly 100 per cent within a month's time, *and before any salt had been added to the contents of the vault*, it would be entirely unsafe to assert that an increase of about 15 per cent in three weeks must be the result of diffusion of the brine from the vault into the excavation. In my opinion therefore the tests fail to establish the fact of communication between the vault and the excavation, but should they be deemed insufficient it will be an easy matter to continue them, and should you so direct I will propose a plan for the continuation of the experiment.

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NEW YORK

STATE DEPARTMENT OF HEALTH

ALBANY

CHEMICAL ANALYSIS OF WATER

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2. Rinse the demijohns thoroughly several times with the water before filling.
3. Fill with a fair sample of the water to be analyzed, and if dippers, funnels or other vessels are used, see to it that these are clean.
4. Close with a *new and clean cork* which should be well tied down with cord. The ends of the cord may be sealed, but top should not be coated with wax.

5. Accompany the sample with description of same, stating source, proximity of houses, stables, privies, cesspools, drains or other sources of possible contamination, and if from well, depth, and character of soil. If several samples are sent state whether from same vicinity or same source, and describe fully, stating reasons for selection of the samples. All samples to be properly numbered or otherwise labeled for purpose of identification.

6. Forward without delay, *prepaying all charges*, to Prof. Willis G. Tucker, Director, Bureau of Chemistry, Albany Medical College, Albany, N. Y.

7. Make the addressed Tag or Marking secure.

The reports not having been elsewhere published are appended:

No. 590

(Results are parts in 100,000)

Received from Forest, fish and game commission, Albany; date received, December 10, 1900; source, discharge from beet sugar factory, Lyons. Appearance: Color, greenish-yellow tint; turbidity, opalescent; sediment, considerable. Odor at 100 degrees F., disagreeable; chlorine in chlorides, 2.1; total solids, 110.60; loss on ignition, 60.60; behavior during ignition, blackened, strong odor; mineral matter, 50.00.

Dated at State Board of Health laboratory, Albany, N. Y., January 4, 1901.

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No. 591

(Results are parts in 100,000)

Received from Forest, fish and game commission, Albany; date received, December 10, 1900; source, Clyde river, below beet sugar factory. Appearance: Color, greenish-yellow tint; turbidity, opalescent; sediment, considerable. Odor at 100 degrees F., very disagreeable; chlorine in chlorides, 1.7; free ammonia, 0.0095; albuminoid ammonia, 0.0830; nitrites, none; total solids, 74.60; loss on ignition, 30.40; behavior during ignition, blackened, strong odor; mineral matter, 44.20; remarks, polluted and unfit for use.

Dated at State Board of Health laboratory, Albany, N. Y., January 4, 1901.

No. 592

(Results are parts in 100,000)

ceived from Daniel Delehanty, governor Sailors' snug har-
New Brighton; date received, January 17, 1901; source, not
d; how labeled, " from Sailors' snug harbor." Appearance:
r, light yellowish green; turbidity, very slight; sediment,
ng. Odor at 100 degrees F., very slight; chlorine in chlo-
, 0.70; free ammonia, 0.0017; albuminoid ammonia, 0.0055;
tes, none; total solids, 13.40; loss on ignition, 6.20; behavior
ng ignition, no change; mineral matter, 7.20; remarks, sat-
tory quality.
ted at State Board of Health laboratory, Albany, N. Y.,
ary 23, 1901.

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No. 593

(Results are parts in 100,000)

ceived from board of health, Cortland; date received, Janu-
16, 1901; source, well; how labeled, " No. 1, Garfield street."
arance: Color, light greenish tint; turbidity, none; sedi-
, none. Odor at 100 degrees F., none; chlorine in chlorides,
free ammonia, 0.0013; albuminoid ammonia, 0.0088; nitrites,
; total solids, 21.20; loss on ignition, 8.40; behavior during
ion, no change; mineral matter, 12.80; remarks, fair quality.
ted at State Board of Health laboratory, Albany, N. Y.,
uary 1, 1901.

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No. 594

(Results are parts in 100,000)

ceived from board of health, Cortland; date received, Janu-
16, 1901; source, well; how labeled, " No. 2, 73 Homer ave-
' Appearance: Color, light greenish tint; turbidity, none;
nent, trifling. Odor at 100 degrees F., none; chlorine in
ides, 0.50; free ammonia, 0.0000; albuminoid ammonia,
5; nitrites, none; total solids, 15.20; loss on ignition, 5.40;

behavior during ignition, no change; mineral matter, 9.80; remarks, satisfactory quality.

Dated at State Board of Health laboratory, Albany, N. Y., February 1, 1901.

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No. 595

(Results are parts in 100,000)

Received from board of health, Cortland; date received, January 16, 1901; source, well; how labeled, "No. 3, Frost's house." Appearance: Color, light greenish tint; turbidity, none; sediment, trifling. Odor at 100 degrees F., none; chlorine in chlorides, 0.30; free ammonia, 0.0000; albuminiod ammonia, 0.0030; nitrites, none; total solids, 16.40; loss on ignition, 4.20; behavior during ignition, no change; mineral matter, 12.20; remarks, satisfactory quality.

Dated at State Board of Health laboratory, Albany, N. Y., February 1, 1901.

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No. 596

(Results are parts in 100,000)

Received from board of health, Cortland; date received, January 16, 1901; source, well; how labeled, "No. 4, Benton's mill." Appearance: Color, light greenish-yellow tint; turbidity, none; sediment, trifling. Odor at 100 degrees F., none; chlorine in chlorides, 0.50; free ammonia, 0.0015; albuminoid ammonia, 0.0040; nitrites, none; total solids, 19.80; loss on ignition, 3.20; behavior during ignition, no change; mineral matter, 16.60; remarks, satisfactory quality.

Dated at State Board of Health laboratory, Albany, N. Y., February 1, 1901.

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No. 597

(Results are parts in 100,000)

Received from board of health, Cortland; date received, January 19, 1901; source, city water supply; how labeled, "No. 5, city

water." Appearance: Color, light greenish tint; turbidity, none; sediment, trifling. Odor at 100 degrees F., none; chlorine in chlorides, 0.30; free ammonia, 0.0005; albuminoid ammonia, 0.0015; nitrites, none; total solids, 12.60; loss on ignition, 4.20; behavior during ignition, darkened very slightly; mineral matter, 8.40; remarks, excellent quality.

Dated at State Board of Health laboratory, Albany, N. Y., February 1, 1901.

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No. 598

(Results are parts in 100,000)

Received from board of health, Belmont; date received, January 19, 1901; source, well; how labeled, "A, Mrs Ward." Appearance: Color, greenish yellow tint; turbidity, distinct; sediment, very slight. Odor at 100 degrees F., none; chlorine in chlorides, 2.40; free ammonia. 0.0035; albuminoid ammonia, 0.0050; nitrites, none; total solids, 18.80; loss on ignition, 5.60; behavior during ignition, darkened; mineral matter, 13.20; remarks, fairly satisfactory quality.

Dated at State Board of Health laboratory, Albany, N. Y., February 1, 1901.

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No. 599

(Results are parts in 100,000)

Received from board of health, Belmont; date received, January 19, 1901; source, well; how labeled, "B, Sortose." Appearance: Color, greenish yellow tint; turbidity, distinct; sediment, very slight. Odor at 100 degrees F., none; chlorine in chlorides, 3.10; free ammonia, 0.0025; albuminoid ammonia, 0.0060; nitrites, none; total solids, 26.40; loss on ignition, 8.60; behavior during ignition, darkened slightly; mineral matter, 17.80; remarks, fairly satisfactory quality.

Dated at State Board of Health laboratory, Albany, N. Y., February 1, 1901.

No. 600

(Results are parts in 100,000)

Received from board of health, Belmont; date received, January 19, 1901; source, springs; how labeled, "Belmont, N. Y., village supply." Appearance: Color, light greenish yellow tint; turbidity, very slight; sediment, trifling. Odor at 100 degrees F., none; chlorine in chlorides, 0.10; free ammonia, 0.0020; albuminoid ammonia, 0.0040; nitrites, none; total solids, 10.60; loss on ignition, 2.40; behavior during ignition, darkened slightly; mineral matter, 8.20; remarks, good quality.

Dated at State Board of Health laboratory, Albany, N. Y., February 1, 1901.

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No. 601

(Results are parts in 100,000)

Received from Dr. A. H. Brown, health officer, Auburn; date received, March 5, 1901; source, ice from Curtis pond; how labeled, "from R. A. Dyer, Auburn, N. Y." Appearance: Color, very light greenish tint; turbidity, none; sediment, none. Odor at 100 degrees F., none; chlorine in chlorides, trace; free ammonia, 0.0035; albuminoid ammonia, 0.0055; nitrites, none; total solids, 0.80; loss on ignition, 0.40; behavior during ignition, no change; mineral matter, 0.40; remarks, fairly satisfactory quality.

Dated at Bureau of Chemistry, March 13, 1901.

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No. 602

(Results are parts in 100,000)

Received from State Department of Health; date received, April 11, 1901; source, not stated; how labeled, "Lake water." Appearance: Color, greenish tint; turbidity, none; sediment, some flocculent, brownish. Odor at 100 degrees F., slight, earthy; chlorine in chlorides, 0.10; free ammonia, 0.0020; albuminoid ammo-

05; nitrites, none; total solids, 9.80; loss on ignition, 3.80;
: during ignition, blackened; mineral matter, 6.00;
, fairly satisfactory quality.
at Bureau of Chemistry, April 17, 1901.

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No. 603

(Results are parts in 100,000)

ved from State Department of Health; date received,
., 1901; source, not stated; how labeled, "spring water."
ance: Color, very slight greenish tint; turbidity, none;
t, very slight. Odor at 100 degrees F., slight earthy;
: in chlorides, 0.30; free ammonia, 0.0020; albuminoid
a, 0.0040; nitrites, present; total solids, 8.20; loss on
, 3.40; behavior during ignition, darkened slightly; min-
tter, 4.80; remarks, satisfactory quality.
l at Bureau of Chemistry, April 17, 1901.

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No. 604

(Results are parts in 100,000)

ved from Dr. J. Charles La Dow, health officer, Mechanic-
ate received, May 20, 1901; source, well; how labeled,
Albertson, well." Appearance: Color, greenish yellow
rbidity, very slight; sediment, very slight. Odor at 100
F., none; chlorine in chlorides, 2.90; free ammonia,
albuminoid ammonia, 0.0107; nitrites, present; total
30.20; loss on ignition, 6.20; behavior during ignition,
d, some odor; mineral matter, 24.00; remarks, unsatis-
quality. Advise discontinuance of its use.
l at Bureau of Chemistry, May 25, 1901.

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No. 605

(Results are parts in 100,000)

ved from Dr. L. A. Bromley, health officer, Granville;
ceived, May 20, 1901; source, well; how labeled, "from

L. A. Bromley, M. D., Granville, N. Y." Appearance: color, very light greenish tint; turbidity, none; sediment, none. Odor at 100 degrees F., none; chlorine in chlorides, 0.90; free ammonia, 0.0005; albuminoid ammonia, 0.0045; nitrites, none; total solids, 13.60; loss on ignition, 4.80; behavior during ignition, darkened slightly; mineral matter, 8.80; remarks, satisfactory quality.

Dated at Bureau of Chemistry, May 25, 1901.

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No. 606

(Results are parts in 100,000)

Received from Hon. John F. Ahern, Troy, N. Y.; date received, June 14, 1901; source, spring; how labeled, "north side of road, No. 1." Appearance: Color, none; turbidity, none; sediment, none. Odor at 100 degrees F., none; chlorine in chlorides, 0.50; free ammonia, 0.0005; albuminoid ammonia, 0.0035; nitrites, 0.0000; nitrates, 0.0510; total solids, 25.80; loss on ignition, 7.20; behavior during ignition, no change; mineral matter, 18.60; remarks, excellent quality.

Dated at Bureau of Chemistry, June 19, 1901.

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No. 607

(Results are parts in 100,000)

Received from Hon. John F. Ahern, Troy, N. Y.; date received, June 14, 1901; source, spring, how labeled, "south side of road, No. 2." Appearance: Color, none; turbidity, none; sediment, none. Odor at 100 degrees F., none; chlorine in chlorides, 0.90; free ammonia, 0.0005; albuminoid ammonia, 0.0038; nitrites, 0.0000; nitrates, 0.1785; total solids, 43.20; loss on ignition, 7.60; behavior during ignition, no change; mineral matter, 35.60; remarks, good quality.

Dated at Bureau of Chemistry, June 19, 1901.

No. 608

(Results are parts in 100,000)

Received from Dr. H. F. Kingsley, health officer, Schoharie; date received, June 18, 1901; source, well. Appearance: Color, greenish yellow; turbidity, decided; sediment, considerable, largely made up of floating brownish matter. Odor at 100 degrees F., highly offensive (sewage like); chlorine in chlorides, 1.30; free ammonia, 0.8460; albuminoid ammonia, 0.1180; nitrites, 0.0000; nitrates, 0.0080; total solids, 70.80; loss on ignition, 17.80; behavior during ignition, blackened, strong odor; mineral matter, 53.00; remarks, filthy and unfit for use.

Dated at Bureau of Chemistry, June 22, 1901.

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No. 609

(Results are parts in 100,000)

Received from Edward C. Buchenau, secretary board of health, Clarkstown; date received, June 20, 1901; source, not stated; how labeled, "Board of Health of Clarkstown." Appearance: Color, light greenish; turbidity, none; sediment, very slight. Odor at 100 degrees F., none; chlorine in chlorides, 1.90; free ammonia, 0.0013; albuminoid ammonia, 0.0027; nitrites, 0.0034; nitrates, 0.2220; total solids, 31.80; loss on ignition, 6.40; behavior during ignition, darkened very slightly; mineral matter, 25.40; remarks, fairly satisfactory quality.

Dated at Bureau of Chemistry, June 22, 1901.

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No. 610

(Results are parts in 100,000)

Received from George E. Rogers, secretary board of health, Fort Edward; date received, July 11, 1901; source, reservoir vil-large supply; how labeled, "No. 1, Reservoir." Appearance: Color, light greenish tint; turbidity, none; sediment, very slight. Odor at 100 degrees F., slight; chlorine in chlorides, 0.20; free

ammonia, 0.0025; albuminoid ammonia, 0.0050; nitrites, 0.00 nitrates, 0.0060; total solids, 4.60; loss on ignition, 1.40; behav during ignition, darkened very sligtly; mineral matter, 3.20; marks, satisfactory quality.

Dated at Bureau of Chemistry, July 16, 1901.

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No. 611

(Results are parts in 100,000)

Received from George E. Rogers, secretary board of heal Fort Edward; date received, July 11, 1901; source, village su ply; how labeled, "2 fauc." Appearance: Color, light greeni tint; turbidity, slight; sediment, slight, brownish; odor at 1 degrees F., slight; chlorine in chlorides, 0.20; free ammon 0.0015; albuminoid ammonia, 0.0052; nitrites, 0.0000; nitrat 0.0232; total solids, 3.80; loss on ignition, 1.20; behavior duri ignition, darkened very slightly; mineral matter, 2.60; remarl satisfactory quality.

Dated at Bureau of Chemistry, July 16, 1901.

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No. 612

(Results are parts in 100,000)

Received from Dr. A. M. Burt, health officer, Glen; date ceived, July 12, 1901; source, well; how labeled, "From Gl N. Y." Appearance: Color, light greenish tint; turbidity, ve slight; sediment, slight. Odor at 100 degrees F., slight; chlori in chlorides, 7.70; free ammonia, 0.0310; albuminoid ammon 0.0112; nitrites, 0.0053; nitrates, 3.4320; total solids, 111.80; lo on ignition, 45.80; behavior during ignition, darkened; mine matter, 66.00; remarks, polluted and entirely unfit for domes use.

Dated at Bureau of Chemistry, July 16, 1901.

No. 613

(Results are parts in 100,000)

Received from State Department of Health; date received, July 18, 1901; source Chenango lake; how labeled, "Chenango lake, rear club house." Appearance: Color, light greenish tint; turbidity, none; sediment, slight. Odor at 100 degrees F., very slight; chlorine in chlorides, 0.15 free ammonia, 0.0125; albuminoid ammonia, 0.0105; nitrites, 0.0017; nitrates, 0.0055; total solids, 4.80; loss on ignition, 2.40; behavior during ignition, blackened; mineral matter, 2.40; remarks, cannot be recommended for domestic use.

Dated at Bureau of Chemistry, July 23, 1901.

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No. 614

(Results are parts in 100,000)

Received from State Department of Health; date received, July 18, 1901; source, Chenango lake; how labeled, "Chenango lake, back of island." Appearance: Color, light greenish tint; turbidity, none; sediment, slight. Odor at 100 degrees F., none; chlorine in chlorides, 0.10; free ammonia, 0.0055; albuminoid ammonia, 0.0107; nitrites, none; nitrates, 0.0037; total solids, 5.40; loss on ignition, 2.60; behavior during ignition, blackened; mineral matter, 2.80; remarks, fairly satisfactory quality.

Dated at Bureau of Chemistry, July 23, 1901.

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No. 615

(Results are parts in 100,000)

Received from Dr. Horace Babcock, H. O., Gowanda; date received, August 28, 1901; source, well; how labeled "..... Gowanda, N. Y." Appearance: Color, greenish yellow tint; turbidity, decided; sediment, considerable. Odor at 100 degrees F., slight; chlorine in chlorides, 18.40; free ammonia,

0.0080; albuminoid ammonia, 0.0055; nitrites, 0.0053; nitrate 0.1112; total solids, 80.60; loss on ignition, 16.20; behavior du ing ignition, darkened; mineral matter, 64.40; remarks, unsati factory quality.

Dated at Bureau of Chemistry, September 4, 1901.

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No. 616

(Results are parts in 100,000)

Received from Dr. W. P. Spratling, superintendent, Crai Colony, Sonyea; date received, August 30, 1901; source, spring how labeled "Water sample P." Appearance: Color, ligh greenish tint; turbidity, very slight; sediment, none; odor at 10 degrees F., slight; chlorine in chlorides, 0.05; free ammoni 0.0030; albuminoid ammonia, 0.0075; nitrites, 0.0048; nitrate 0.1668; total solids, 22.80; loss on ignition, 5.20; behavior durin ignition, darkened slightly; mineral matter, 17.60; total hard ness, 21.50; hardness after boiling, 8.86; remarks, satisfactor quality.

Dated at Bureau of Chemistry, September 4, 1901.

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No. 617

(Results are parts in 100,000)

Received from Dr. W. T. Jones, health officer, Alpine; dat received, September 12, 1901; source, well; how labeled, "Dr W. T. Jones, Alpine, N. Y." Appearance: Color, nearly color less; turbidity, slight; sediment, slight. Odor at 100 degrees F. none; chlorine in chlorides, 0.40; free ammonia, 0.0015; albu minoid ammonia, 0.0095; nitrites, none; nitrates, 0.2220; tota solids, 19.80; loss of ignition, 3.80; behavior during ignition, darkened slightly; mineral matter, 16.00; remarks, fair quality.

Dated at Bureau of Chemistry, September 16, 1901.

No. 618

(Results are parts in 100,000)

Received from Dr. A. H. Getty, health officer, Athens; date received, September 17, 1901; source, not stated; how labeled, "From Athens Board of Health." Appearance: Color, light greenish tint; turbidity, very slight; sediment, considerable. Odor at 100 degrees F., slight; chlorine in chlorides, 10.80; free ammonia, 0.0020; albuminoid ammonia, 0.0090; nitrites, 0.0074; nitrates, 1.2920; total solids, 95.40; loss on ignition, 22.60; behavior during ignition, darkened; mineral matter, 72.80; remarks, unsatisfactory quality.

Dated at Bureau of Chemistry, September 20, 1901.

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No. 619

(Results are parts in 100,000)

Received from Dr. H. D. Wey, health officer, Elmira; date received, September 30, 1901; source, water supply; how labeled, "From H. D. Wey, Health Officer." Appearance, Color, light greenish tint; turbidity, very slight; sediment, trifling. Odor at 100 degrees F., none; chloride in chlorides, 0.90; free ammonia, 0.0020; albuminoid ammonia, 0.0045; nitrites, none; nitrates, none; total solids, 23.40; loss on ignition, 3.20; behavior during ignition, darkened very slightly; mineral matter, 20.20; remarks, good quality.

Dated at Bureau of Chemistry, October 10, 1901.

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No. 620

(Results are parts in 100,000.)

Received from Pierre Becker, health inspector, Rome; date received, October 1, 1901; source, well; how labeled, "Water from dug well." Appearance: Color, light greenish tint; turbidity, none; sediment, trifling. Odor at 100 degrees F., none;

chlorine in chlorides, 2.10; free ammonia, 0.0040; albuminoid ammonia, 0.0045; nitrites, none; nitrates, 0.1816; total solids, 30.80; loss on ignition, 4.20, behavior during ignition, darkened very slightly; mineral matter, 26.60; remarks, cannot be recommended for domestic employment if a better supply is obtainable.

Dated at Bureau of Chemistry, October 10, 1901.

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No. 621

(Results are parts in 100,000.)

Received from Pierre Becker, health inspector, Rome; date received, October 1, 1901; source, well; how labeled, "Water from driven well." Appearance: Light greenish tint; turbidity, none; sediment, trifling; odor at 100 degrees F., none; chlorine in chlorides, 1.80; free ammonia, 0.0000; albuminoid ammonia, 0.0010; nitrites, 0.0016; nitrates, 0.6668; total solids, 38.20; loss on ignition, 5.80; behavior during ignition, no change; mineral matter, 32.40; remarks, satisfactory quality.

Dated at Bureau of Chemistry, October 10, 1901.

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No. 622

(Results are parts in 100,000.)

Received from Dr. J. W. King, health officer, Stockport; date received, October 3, 1901; source, well; how labeled, "From Dr. J. W. King, health officer, Stockport,N. Y." Appearance: Color, greenish yellow tint; turbidity, slight; sediment, slight. Odor at 100 degrees F., slight; chlorine in chlorides, 5.60; free ammonia, 0.0020; albuminoid ammonia, 0.0115; nitrites, 0.0006; nitrates, 0.8888; total solids, 57.40; loss on ignition, 16.60; behavior during ignition, darkened slightly; mineral matter, 40.80; remarks, unsatisfactory quality.

Dated at Bureau of Chemistry, October 10, 1901.

No. 623

(Results are parts in 100,000.)

Received from T. J. Cleland, M. D., New Lebanon; date received, October 12, 1901; source, well; how labeled, "From Fred Kipp, Lebanon Springs." Appearance: Color, light greenish tint; turbidity, none; sediment, slight. Odor at 100 degrees F., none; chlorine in chlorides, 1.20; free ammonia, 0.0070; albuminoid ammonia, 0.0070; nitrites, 0.0003; nitrates, 0.3332; total solids, 31.20; loss on ignition, 8.80; behavior during ignition, no change; mineral matter, 22.40; remarks, not satisfactory.

Dated at Bureau of Chemistry, October 28, 1901.

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No. 624.

(Results are parts in 100,000)

Received from T. J. Cleland, M.D., New Lebanon; date received, October 12, 1901; source, well; how labeled, "From Henry Haight, Lebanon Springs." Appearance: Color, light greenish tint; turbidity, none; sediment, slight. Odor at 100 degrees F., none; chlorine in chlorides, 1.10; free ammonia, 0.0015; albuminoid ammonia, 0.0055; nitrites, 0.0002; nitrates, 0.1176; total solids, 19.60; loss on ignition, 5.40; behavior during ignition, no change; mineral matter, 14.20; remarks, not entirely satisfactory.

Dated at Bureau of Chemistry, October 28, 1901.

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No. 625.

(Results are parts in 100,000)

Received from T. J. Cleland, M.D., New Lebanon; date received, October 12, 1901; source, artesian well; how labeled, "From Mrs. Tanner, Lebanon Springs." Appearance: Color, nearly colorless; turbidity, none; sediment, trifling. Odor at 100 degrees F., none; chlorine in chlorides, 0.30; free ammonia, 0.0020; albuminoid ammonia, 0.0040; nitrites, none; nitrates, none; total solids, 9.60;

loss on ignition, 2.80; behavior during ignition, no change; mineral matter, 6.80; remarks, good quality.

Dated at Bureau of Chemistry, October 28, 1901.

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No. 626.

(Results are parts in 100,000)

Received from T. J. Cleland, M.D., New Lebanon; date received, October 12, 1901; source, well; how labeled, "From Berkshire Inn, Lebanon Springs." Appearance: Color, nearly colorless; turbidity, none; sediment, very slight. Odor at 100 degrees F., none; chlorine in chlorides, 0.80; free ammonia, 0.0025; albuminoid ammonia, 0.0039; nitrites, 0.0002; nitrates, 0.0572; total solids, 18.60; loss on ignition, 3.20; behavior during ignition, no change; mineral matter, 15.40; remarks, not entirely satisfactory.

Dated at Bureau of Chemistry, October 28, 1901.

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No. 627.

(Results are parts in 100,000)

Received from Dr. C. B. Bacon, health officer, Waterloo; date received, October 28, 1901; source, well; how labeled, "From C. B. Bacon, health officer, Waterloo, N. Y." Appearance: Color, light greenish tint; turbidity, very slight; sediment, slight. Odor at 100 degrees F., slight (earthy); chlorine in chlorides, 10.90; free ammonia, 0.0043; albuminoid ammonia, 0.0105; nitrites, 0.0002; nitrates, 0.8896; total solids, 99.40; loss on ignition, 35.80; behavior during ignition, no change; mineral matter, 63.60; remarks, fairly satisfactory quality.

Dated at Bureau of Chemistry, November 8, 1901.

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No. 628.

(Results are parts in 100,000)

Received from Perry R. Bartram, secretary board of health, Fredonia; date received, October 29, 1901; source, village water

supply; how labeled, "From board of health, Fredonia, N. Y." Appearance: Color, greenish yellow tint; turbidity, slight; sediment, slight. Odor at 100 degrees F., very slight; chlorine in chlorides, 0.20; free ammonia, 0.0035; albuminoid ammonia, 0.0080; nitrites, none; nitrates, none; oxygen consumed, 0.3065; total solids, 14.60; loss on ignition, 6.20; behavior during ignition, blackened; mineral matter, 8.40; hardness, 13.60; remarks, fairly satisfactory quality.

Dated at Bureau of Chemistry, November 8, 1901.

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No. 629.

(Results are parts in 100,000)

Received from Dr. A. O. Bogert, health officer, Nanuet; date received, November 10, 1901; source, well; how labeled, "No. 1." Appearance: Color, greenish yellow tint; turbidity, slight; sediment, considerable. Odor at 100 degrees F., very slight; chlorine in chlorides, 20.10; free ammonia, 0.0050; albuminoid ammonia, 0.0105; nitrites, 0.0166; nitrates, 5.7000; total solids, 164.60; loss on ignition, 61.20; behavior during ignition, darkened slightly; mineral matter, 103.40; remarks, entirely unfit for domestic use.

Dated at Bureau of Chemistry, November 18, 1901.

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No. 630.

(Results are parts in 100,000)

Received from Dr. A. O. Bogert, health officer, Nanuet; date received, November 10, 1901; source, well; how labeled, "No. 2." Appearance: Color, light greenish tint; turbidity, very slight; sediment, trifling. Odor at 100 degrees F., none; chlorine in chlorides, 3.40; free ammonia, 0.0011; albuminoid ammonia, 0.0025; nitrites, 0.0013; nitrates, 0.4444; total solids, 39.60; loss on ignition, 15.60; behavior during ignition, no change; mineral matter, 24.00; remarks, cannot be recommended for domestic use.

Dated at Bureau of Chemistry, November 18, 1901.

## CONCLUSION

As hereinbefore stated, various matters of minor importa have received attention during the year. Inquiries concern illuminating oils, the use of sacharin and of chemical prese tives in foods, and many other sanitary matters have b answered, and advice given on a variety of subjects. The o expense of the work has been the salary of the director fr January 1, 1901, to April 1, and the actual cost of analysis such articles as have been submitted to him from that date January 1, 1902. Under the Public health law and various ot laws, the State Department of Health is required to "t cognizance of the interests of the public health as affected the sale or use of food and drugs and the adulterations there and make all necessary inquiries and investigations relat thereto," and it is required to examine samples of spiritu fermented and malt liquors sold in the state, and to exer supervision over the quality of the illuminating oils offered sale, and it is constantly called upon by public institutions, lo boards of health and individuals, to investigate water suppl sewage purification works and other problems of a chemi nature. Most of this work, a large part of which is of essen and fundamental importance, must remain undone until s time as adequate appropriation is made for carrying it on.

Respectfully submitted.

WILLIS G. TUCKER

*Director Bureau of Chemistr*

ALBANY, N. Y., *January* 1, 1902

# Proceedings of the Conference

OF

# Sanitary Officers of the State.

# roceedings of the Conference of Sanitary Officers of the State of New York, Capitol, Albany October 24, 25, 1901

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## OPENING ADDRESS

By State Health Commissioner Daniel Lewis

It is a pleasant privilege, ladies and gentlemen, to welcome u to this first conference of sanitary health officers. We had ped the governor would be present this evening but he is not le to do so; but there are abundant evidences around the pitol of the governor's presence in the building. The State partment of Health is one of those evidences. As you have ntinued to write letters directed to the State Board of Health, efer to this matter now in order to remind you that there is State Board of Health, and although the functions of the ard continue, when you address the Department of Health ease remember that it is not the State Board of Health. at is one of the evidences of the governor's presence in the pitol.

Whether it was on account of the failure of myself to produce oper arguments, or whether my position was wrong in urging at there should continue to be a State Board of Health, I do t know. At all events my arguments did not prevail and we e acting under the new department, and we have called you gether, invited you to attend the conference, for the first ing which impresses itself upon me as the new department came organized was the necessity for harmony of action tween this department and the local health officers through- t the state. Without such harmony it seemed to me that e work of the department could not be well sustained. It is r the purpose of getting your views as to what you require of e Health Department, and of giving you our views in some

respects as to the things which you owe to the state as represented by the department that we are here met this evening. We are not here to hold a school of instruction; we are here to give you such information as we are enabled to do through the very excellent program, and we expect you to give what information you have to us. We expect you to discuss the papers here presented and the subjects introduced by the speakers. We expect you, if you have a question which you would like to have answered by the speakers, to write that question and send it up here and it will be answered. We expect you to give us your views, if they differ from the views of the speakers, in the administration of affairs in your own municipalities. In other words, we are here to confer on matters pertaining to the public health.

I need make no apology to you, gentlemen, for calling you together on such a mission. If I mistake not, the most important interests of the people of the state are in your hands. I make no exception, and if by this conference, which I expect will be an annual one, you are enabled to better subserve the public interests, the object which we had in view will be attained.

I wish to thank you for the interest you have manifested in the work by your presence.

## THE POWERS AND LIMITATIONS OF LOCAL HEALTH BOARDS UNDER PUBLIC HEALTH LAW

By Robert C. Taylor of New York

Mr. Commissioner, and gentlemen of the conference—Dr. Lewis has not misrepresented me perhaps in saying that it would take three or four years to discuss the marvelous topic that he has given me to discuss, for he asks me to discuss the powers and limitations of local health boards under the public health law, and as their powers are endless a discussion of the subject would necessarily be endless, and I decline to enter upon any such task.

At the outset it seems to me that a word not of apology nor of explanation but rather of a desire to come closer into contact with you is essential.

The doctor has been good enough to assign to me as a topic, "The powers and limitations of local boards of health under the public health law," and it is my hope to devote some desultory remarks to that subject.

But I wish to say at the outset that the topic is too vast to be logically treated in the brief time at our disposal, so that at best we can do no better than to touch upon its more salient features.

Moreover, in approaching them I shall approach them as a lawyer and from a lawyer's point of view, so that you need not complain if my treatment of the subject consists almost entirely of a reference to a dozen or more cases taken from the New York reports in which the conduct of local boards has either been vindicated and upheld on the one side, or in which you gentlemen have been brought to book and castigated for various high crimes and misdemeanors on the other.

I assume that no man in this audience needs any elementary instruction in his duties (I believe the doctor himself has just told me so), so that I shall certainly seek to impart none.

But I am led to refrain from the discussion of elementary matters for another and a better reason than mere assumption. Strange as the statement may seem, I can truthfully say that I have read the first eighteen annual reports of the State Board of Health from cover to cover, and the perusal of these dusty and musty pages has taught me many useful things.

I learned, among other things, to marvel at the wonderful way in which the State Board has effected a peaceful revolution in the sanitary organization of the state, bringing order out of chaos, and creating and finally developing into its present excellent shape the army of the state sanitarians whose present representatives I have the honor to address.

These annual reports tell hard, dry facts. They prove to me that I am addressing a body of experts, and justify my unwillingness to enter upon the discussion of generalities with which you are already familiar.

Now the outline story of the development of the present sanitary system is so interesting that we may devote a few moments to the subject by way of introduction.

Prior to 1880 (that is 20 years ago) the sanitary organization of the state was in a lamentable condition of inefficiency. At that time the population was 5,200,000, distributed in 24 cities and 340 villages and 930 towns, making a total of about 1300 municipal units.

At that time all of the 24 cities had local health boards, but of the villages only 40 out of the 340 had any sanitary government; and of the townships, only 20 out of the 930 maintained local boards of health.

There were thus, in brief, about 1300 sanitary districts, of which only 84 had organized boards. The towns, so called, as we know comprised nearly all the area of the state; and when we consider that only one town out of every 46 maintain sanitary government, we can fairly say that the state at large (outside of its cities and more considerable villages) utterly lacked sanitary government.

Such local boards as existed prior to 1880 had been organized under the provisions of the statute of 1850, which statute had been passed in view of the cholera scare of 1849. The provisions of the law of 1850, however, were purely permissive and did not require the creation of health boards, but only authorized them where the people of the locality desired them.

To meet this truly uncivilized condition the State Board of Health was created in 1880 under chapter 322 of the laws of that year, passed May 18th. Eleven days later the Board organized and began its fruitful labors.

We note in passing that Massachusetts in 1869 had been the first state to establish a state board; and New York, eleven years later, was the twenty-third state to follow her example. It would seem not to be saying too much to state that as far as public hygiene was concerned New York at that time was not in a state of enlightenment.

Now let us consider the early plans of the Board and their *gradual* working out.

The law of 1880, under which the new State Board was created, was in substance quite like article I of the present public health law. I realize, of course, that the Board, as such, no longer exists, having been succeeded by the present Department, with its single Commissioner of Health, under laws of 1901, chapter 29. But this change is only a matter of form and does not affect the substance of the statute.

After its organization the State Board at once began its indefatigable labors. It printed copies of the health law, chapter 512, laws of 1880, and of the law relating to vital statistics, chapter 152, laws of 1847, and also a manual for the use of the health officers and suggestions for model ordinances, and distributed these to 13,500 local officials.

In its first report it described itself as "an organizing aid and a central bureau of the observers and promoters of preventive medicine." But obviously there could not be an effective center except with a surrounding circle. In view of the ridiculously small number of local boards then in existence, the State Board found itself almost powerless to act.

Take for example the matter of vital statistics. It was bound to rely entirely upon the reports of local officials; but, as we have seen, there were only 84 local boards out of 1300 localities. The course of action of the State Board then was plain. Every locality throughout the state must have its local board created for it.

Now what was the first activity of the State Board as shown by these reports? It was directed for several years toward the erection and training of more than a thousand needed tributaries. If the annual reports for the years 1881, 1882, 1883, 1884, 1885 and 1886 are perused, even carelessly, the reader will be likely to draw the conclusion that the State Board devoted its entire energy to the matter of erecting local boards throughout the state, and in this deduction the reader will not be in error.

Now, on the other hand, what was the progress of this great work? We have stated the proportion of local boards in 1880, when the State Board began its work. In 1884 we find a most

gratifying increase. Among the villages, out of 336, 132 had independent boards (as I recall the original number was 40 in 1880), whereas 26 worked through the township board; out of the 947 towns (which had 20 local boards in 1880), 539 had local boards in 1884. Is not that marvelous progress? Remember that in 1880 these same 947 towns had only 20 local boards among them all.

Passing then to the report for 1888—that report shows that the cities and villages were nearly all regularly reporting, and that of the 950 towns only 80 were deficient; and in the later reports for 1891 and 1892 it appears that only 12 or 13 towns, comprising rural and sparsely inhabited districts, failed to report. In 1897, which is the last report I have examined, it appears that out of nearly 1000 towns only five, of about 800 inhabitants each, failed to report. It goes without saying that the villages and the cities were not derelict in their duties.

The net result of this work is that in 17 years, through the steady efforts of the central State Board, nearly every sanitary locality in the state has had its local health department erected and put into practical operation. This achievement commends itself to my judgment as simply marvelous.

But there was another duty than that of mere creation, and in other words, the duty of education went hand in hand with the work of construction. Now at the beginning the State Board started in with the laws previously existing, which were inadequate in many respects. They had never been practically enforced since there was no interest in the subject, and from the time the State Board started upon active operations these inadequacies were discovered and from year to year corrected. These corrections largely took the form of devising improved machinery for the bureau of vital statistics, which was one of the two bureaus of work in the State Department. In fact the greater part of the energy of the State Board seems to have been devoted to the development of this bureau of vital statistics and to the perfecting of its details, for the Board well knew that the matter of reporting vital statistics did not depend

upon emergencies, but was a matter of every day occurrence; and they knew also that if that bureau could be got into good working operation the entire system of local sanitary government which they desired to create would develop naturally into ultimate efficiency.

This work of instruction and education was partly done under the stress of mandatory statutes, but largely as a labor of love, at least as I read the annual reports. Under the mandatory provisions of the law of 1880 it was the duty of the central Board to prepare all necessary forms for obtaining and preserving the vital statistics; and forms to authorize the transportation of corpses, burial certificates and the like; and this of course the central Board did and forwarded to the local boards because they had to.

But in addition to fulfilling the duties thus imposed upon it by statutory command, the State Board carried on also a voluntary work of education, the effects of which must have been unique in inducing system and order and regularity and effectiveness into the work of the local boards.

Space and time do not permit any detailed statement of the amount of literature circulated by the State Board, but in report No. 3 for the year 1882 we observe the following list of sanitary documents to have been published and sent broadcast, giving what I understand to be the titles of the pamphlets:

1 Copies of the public health law.

2 Ready references to the health laws.

3 Duties and procedure and illustrative cases.

4 Plan of organization of town boards.

5 Suggestions to health officers.

6 Rules as to vital statistics.

7 Suggestions as to the construction of schoolhouses.

8–19 A list of eleven circulars which I have grouped together relating to infectious and contagious diseases, such as diphtheria, smallpox, typhoid, cholera, etc.

In other words, it seems to me that the efficiency and knowledge of the local boards in all these particulars, and their

systematic knowledge of the subject which enables them all to work for one common thing and one common purpose, is to be traced back to this information circulated and distributed by the central Board in 1882. In fact the relation of the local boards to the State Board seems to have been almost that of pupils and teacher; and the State Board on its side seems to have played the part of an *alma mater* in the truest sense of that term.

These successive annual reports have also presented a faithful picture of the activity of the State Board in the matter of its own peculiar work, but with the consideration of that topic we are not directly concerned. These reports also successively work out the development of the health legislation of the state as it exists to-day. In them are to be found the earliest suggestions of the accepted methods which obtain to-day, namely, the comprehensive sewerage system under the direction of the State Board; the protection of the water supplies of the state under the direction of the State Board with its provisions for rules and regulations suitable to the particular locality, and a thousand other matters of like import.

I confess that I began the reading of these annual reports with much misgiving, yet in the hope that they might furnish me a faithful picture of the actual working of the sanitary laws. This was two years ago. At that time I had been engaged by the dean of one of the medical schools in the city of New York to prepare a set of lectures on sanitary subjects, and being but a lawyer I had no idea where to go in order to find out what truly and actually occurred in the matter of legislation of this character. I started in at these reports as a seeker not after truth but simply after information, and I confess that I developed and discovered an interest in the subject which surprised even myself.

Now I have said that they have taught me many things. I can add now, and it is pertinent to what I am saying, that they taught me even more than that. They taught me a profound respect for the system which the State Board has created, and

it is this respect which makes me now hesitate to attempt to instruct this body (which here in its proper person represents the body of officers created by the State Board) in its duties and obligations.

Now, gentlemen, I shall have to call that my introduction; and now I am at sea. Your presiding officer has asked me to discuss the powers of local health boards under the public health law. But how can I do it, how can any man do it? What are the powers of the State Board, of the local boards, under the public health law? If we start with the existence of a nuisance (I use the word nuisance in the general sense of anything offensive over which the local board has jurisdiction) then the powers of the local board, of its health officer, are so extensive that they are illimitable; there is no end to them. Every instance has to be met by the remedy proper to its own abatement, and that is all that can be said; it seems to me a distinct end to the matter.

Now, on the subject, however. If any man said to me, "What are the powers of local health boards under the public health law?" I should turn to my little manual, which I have the same as any local health officer (although I do not make the same use of it), and tell him to turn to section 21, and section 21 would describe in just so many words the general powers and duties of local boards of health. And when he said, "What are the powers; where do you find them?" I would say, "You find them there." He would say, "Where are they?" and I would say, "Read for yourself." And there is no question but that every man has to read for himself in exercising the powers given under this section 21 in all the manifold forms in which they arise.

In attempting, then, to discuss that subject I have had nothing to do except to wonder what I could say that would bear upon it, not by way of enumeration, but indirectly as reflecting the attitude which the courts of law, who are the ultimate judges of all of us, have expressed their views.

I shall refer then in this connection to one case indicating the broad powers which the sanitarians possess, and then to two

other cases, which really amount to but one, showing the limitations in that respect under which they operate.

The health officers, under section 21 (and section 21 is expressive of nothing but practical common sense) have two great forms of functions—not merely two functions, but forms of functions.

The first is contained in the three or four sections which I will read here:

"Every such local board shall make and publish from time to time such orders and regulations as they may deem necessary and proper for the preservation of life and health, and the execution and enforcement of the public health law in the community."

Now, what is that delegation of power? What does it amount to? To nothing more than this: The legislature has abdicated its own law-making functions, as far as that municipality is concerned, and has conferred upon the local board of health the power and the corresponding obligation to pass such general laws as shall conserve the health of that particular community.

Now, I cannot begin to tell what is included under that grant of power—the power to suppress nuisances. In New York city there is clearly the power to suppress the smoke nuisance, which would be an absurd power to grant to a man who lived in a country village. On the other hand, village officers have (and doubtless that exists as the result of the inherent sovereignty of the state and without regard to any express legislative enactment) another form of power: "It shall make, without publication thereof, such orders and regulations for the suppression of nuisances, and concerning all other matters in its judgment detrimental to the public health in special or individual cases, not of general application, and serve copies thereof upon the owner or occupant of any premises whereon such nuisance or other matters may exist, or post the same in some conspicuous place thereon."

The difference between these two classes of power is obvious *on the face;* one relates to a definite nuisance—something offen-

sive or filthy or deleterious to health, which arises and comes to the notice of the officer—to some incident, in other words.

The first delegation of power relates to the propriety of passing general rules to regulate the conduct of individuals. These two grants of power are as distinct as it is possible to make them.

Now, what have the courts said in passing upon the general acts of officers in these regards? Our courts are not health officers, and have no desire of course to extend their powers and to make themselves more important in the state. The courts stand in between the health officer on the one hand and the private citizen whose property is to some extent destroyed, whose rights are invaded by the health officer, on the other hand. The courts—and our reports bear me out in what I say—have declared that, in every instance in which the effort of the health officer is directed toward the legitimate suppression of a nuisance, no matter what form his effort may take, he has absolute and unqualified power; he can proceed upon his own knowledge; he has to take no evidence; he has to give no notice. It is usual to give notice, more for the sake of preventing subsequent complaint than for any other reason, but as an absolute prerequisite the necessity for notice does not exist; and in every way the courts stand behind the health officer and sustain and vindicate him in his actions, provided only he can point to some nuisance or something deleterious to life or health the existence of which alone gives him any power to make a move.

Now, what do they say, however, on the subject of his liability? People differ in their opinions as to matters of this kind. The man who maintains the nuisance says it is no nuisance at all. The health officer says it is a nuisance, and that issue is often tried out, often in the form of a suit to enjoin the health officer, and sometimes in the way of a suit to recover damages for alleged trespass.

The courts in the state of New York, standing behind the health officer, say that if there is any fact to which he can refer which in itself is sufficient to warrant the exercise of his judg-

ment, and he forms an opinion upon an essential condition of facts presented to him, then, although he acts upon his peril in a sense, yet he can be subject to no liability, because no man whatever can be made to suffer in damages for an error of judgment. That is a general proposition.

Now, what form has that taken? I wish to attract your attention in the shortest way to at least two leading cases.

The first was the question of dams at Yonkers, which have played a large part in the jurisprudence of this state.

In that case the board of health of the locality determined as a fact that these dams were prejudicial to life and health. They had evidence behind them. They ordered a man named Copcutt, who was the owner of the dams, to remove them. That he refused to do, and they tore them down themselves. Copcutt instituted a proceeding by certiorari to review the determination of the board of health of Yonkers, and the board of health brought an action for an injunction restraining Copcutt from rebuilding the dams.

Now, what did the Court of appeals do? They found whether there was clearly a nuisance in existence upon which the board of health or local health officer, could exercise their judgment. They discussed the evidence and they pointed out the first proposition; there was a nuisance, they said, in so many words. If I can find the place I will read the words. Here it is: "The proof here is that all these dams and ponds in the heart of the city are an inevitable menace to the public health, and cannot safely be allowed to exist."

Now, what was the judgment of the court after it found these facts? The health officers were sustained in every particular; the owner of the dams was mulcted in every particular. They had been torn down, although partly rebuilt, and the effort was to prevent this rebuilding, and in that the plaintiff was entirely successful, and Copcutt was told in plain terms that nothing he could do could stop the action of the health officers in their laudable desire to protect the public health.

Now, all sorts of defences were raised to that suit; among other things the insidious defence (it is more insidious than I could probably prove to you in a few moments) that the board of health were taking private property in defiance of the constitutional guaranty.

In answer to that the court stated that the action of the board of health in originally declaring it to be a nuisance was in no sense final and conclusive; the board of health could not make the thing a nuisance because they said it was so; but afterwards, when Copcutt made his effort to restrain the board, and when it was given in evidence what the board had actually done, and the court found that an actual nuisance had existed, they did not hesitate to sustain the sanitary officers, nevertheless stating for the general benefit of the public that the health officer, in the exercise of his judgment, acts necessarily at the peril, not of having damages recovered against him, but of having a suit brought against him, because his judgment in adjudicating the nuisance is in no sense of the word conclusive.

Now, any of my hearers might ask me, just how far does this peril extend? In other words, the peril that a health officer, in discharging his duties to the best of his ability, would lay himself liable to a counter suit for damages. It seems to me that no great amount of trepidation need be entertained upon that score for the reason that the courts will stand by all men who have to form judgments upon questions of fact; will vindicate the judgment of no man when there is no fact whatever upon which to base it.

I will now proceed to read from two cases which reiterate this doctrine in the most decisive fashion.

The first was a case in New York city, 30 years ago, in which a cargo of hogs was sent to the city over the Hudson river railroad. Now, when they got there, either from the heat or that the hogs had been tightly packed in the car, a number of them were dead, and the inspector of the health department stepped up to the train and seized these dead hogs and took them away from the owner and ordered the public scavenger

to haul them off to the public dump and throw them away, depriving the owner of the hogs of his property, against his objection.

The owner sued the city and was allowed to recover, and the ground upon which the recovery was allowed was that there was not a single fact in existence showing that twenty dead hogs which had been choked to death because they had been packed too tightly in the car could, in any sense, be deleterious to the public health.

The court comments upon the fact that there was no odor or a single thing about them to show that they were detrimental to the public health; that the owner had not abandoned them, but on the contrary, demanded them; and there was no reason why the health officer should arbitrarily deprive him of his property; there was nothing but a pretext that it was in behalf of the public health. The consequence was that the owner of the hogs was allowed to recover damages from the city for this unwarranted action of the health officer; and the reason, as we have seen, is plain—there were no facts upon which the inspector could fairly exercise his judgment in taking the hogs.

That case was cited many years later in a case which should be very interesting to those who come from New York city and who know the parties. Dr Purdy, who is well known, at one time president of the Medical society of the county of New York, and who I also have the pleasure of knowing, was attending a case in 1880 which he suspected to be smallpox, the statute requiring physicians in attendance upon suspicious cases to report them to the board of health; and Dr Purdy, as he was bound to do, reported the case to the department of health.

The department sent its inspector, and the inspector, who was a Dr Ames, proceeded to make an examination. He determined from the symptoms and the history of the patient that it was a case of smallpox, and the patient was thereupon removed involuntarily from her dwelling to the smallpox hospital; and *after* all these things had been done it was found that the

patient did not have smallpox at all. She was naturally aggrieved, as any person would have been, and afterwards sued Dr Purdy for damages.

I read the case carefully, but I do not quite understand the ground upon which she based her contention, but it seems to have been that he was guilty of malpractice in making the original diagnosis, although that does not seem to be material to our point of view. At the lower court, at the trial before the jury, a verdict was recovered against Dr Purdy, and he took it up on appeal.

When it got up in the serener atmosphere of the Appellate court, the court reversed the judgment below and indulged in some extremely interesting remarks, which I trust will meet with your interest, if not your approval. He said in that case:

"The inspector of the department was merely called in, and the subsequent proceedings depended entirely upon the exercise of his judgment. There was no relation of cause and effect between Dr Purdy's report of the case and the judgment which the health officer subsequently formed with relation to it."

Then, as to the actions of the inspector, the court said:

"As for the case itself it appeared that there were symptoms in an eruption upon the skin of the patient and in the history of the case, as given by the patient; and these circumstances imposed upon the inspector the duty of adjudging as to this question of fact, and his determination that she should be removed was final, even though in arriving at his determination he committed an error of judgment."

Now in coming to that conclusion the court referred to that pig case and contrasted the action of that inspector, where there was not a single circumstance that showed danger to the public health, while in this case the inspector was called upon to form an opinion, did form an opinion, and was protected in so doing.

Now the only peril I know of that any health officer is under is not of forming the opinion, because it is well known that when either medical men or lawyers are sued they are never mulcted in damages for any error of judgment when they in

good faith form the best judgment that they can upon the facts submitted.

Now in the effort to be regular I shall go back to my title and announce that I now propose to discuss the so-called limitations of local health boards under the public health law according to the rules set down here in this program.

Let us first take up the health officer and ask, from various points of view, what he is incompetent to do. What acts, if done by him, constitute trespass; what acts are beyond the jurisdiction imposed upon him by statute, or which, so to speak, are demanded by the dictates of common sense.

I have divided up these acts for the purpose of refering to a few cases, into four or five divisions, and shall treat them in that order.

In the first place, a health officer is a public officer, and that very fact in itself imposes certain limitations upon him. He cannot make any profit out of his position other than the regular salary which attaches to the office itself.

This I conceive to be a matter of mere personal honor and to be the construction of the general proposition that "a public office is a public trust;" and I should not be so bold as to mention a subject of this sort to this body were it not for the fact that there are two or three cases in the reports which show that some health officers have thought differently and the courts have had to set them right.

Now, for instance, in a certain part of the state, somewhere in the neighborhood of Westchester county, there was a case in which a number of people were sick with smallpox and had to be quarantined, and the local board of health hired physicians and nurses to attend to those sick people—a perfectly legitimate act.

In that particular instance, however, the health officer discharged the extra physician and attended the cases himself. He did good work apparently—no question about his work—but in the end he put in a bill for extra services, sued on it and recovered a judgment for several hundred dollars.

That came up on appeal, and the Appellate division in that region inveighed against him (to use a mild term) and said in effect that his services were fairly comprehended within the duties that the health officer was under an obligation to perform under his regular salary of $75 per month; that they could not be called extrahazardous, and that no liability rested upon the city to make compensation for the service.

Here is another case, very recent, which got up as high as the Court of appeals: It seems that the finances of the village of Plattsburg were overhauled upon a summary inquiry under the statute before the Supreme court, and a number of items were discussed by the court, and some allowed, some disallowed and some criticised. Among them it was held (this surprised me and perhaps I am in error in so stating) that a member of the local board was a public officer and could not sell the village the articles which it required in the treatment of the patients.

Now it is inconceivable that a member of a local board who conducted a legitimate business could do any harm in that way, and yet the court seems to have gotten the idea that his position as a public officer, as a trustee for the public, rendered it inconsistent for him to get any benefit through effecting sales and thereby making profits.

I find on my manuscript, however, another case which says that when you get outside the domain of official duty there is no inconsistency in doing services of that kind. In that case the medical superintendent of Ward's island, who received a salary, was called on to test the sanity of a prisoner, and afterwards appeared and testified before the court, and the court held that in that case the services rendered as a witness were no part of his duties as an officer, and his right to recover was sustained.

Now that ends the first topic of so-called limitations upon your powers; and the next arrangement which commends itself to me I have entitled "Inherent feebleness."

Now that subject will carry me back to the subject which I discussed *before.*

It appears that in the earlier stages of the present syster when the State Board was engaged in the arduous task ( erecting the present mighty machine of which it is the hea it was compelled to undertake much that was properly withi the province of the local boards themselves. The early report of the State Board make plain the difficulties under which th local boards worked.

The officers were new to their tasks, the people regarded thei intervention with suspicion, and much hard work had to b done toward the formation of a proper public sentiment whicl in its turn, would sustain and animate the workers.

Now report No. 3 of the 17 or 18 which I have referred t describes the State Board's regular daily service of answerin the questions propounded by the local boards, and the earlie reports described much local work which was done by the Stat Board which under present conditions would never come t their notice.

Now we all know that many a time a nuisance which an out side party, without local interest, would step in and abate a quick as a flash might pass unnoticed by the local health office because he would not appreciate its importance, and from tha point of view the wisdom of the statutes of the state are vindi cated. They make specific provisions for allowing the centra Board to intervene and take up and abate a nuisance which th local officers, in all honesty, are often too feeble to handle.

Take the awful nuisances that existed in New York city and that neighborhood—the Barren island nuisance, the Newtow creek nuisance and a dozen others which might be mentioned Even the local department, with all its resources, seemed to b unable to cope with them, and there was nothing to do excep to ask the State Board, backed by the governor, to intervene.

That is what I mean by inherent feebleness, and although th reports of the Board indicate that that source of limitation upo the powers of the local board and local officers has large ceased, still it has been during the last 20 years a fact, an as such is worthy of consideration.

Now I have a third topic here marked with a big three, entitled "Matters outside of the territorial jurisdiction," and that I believe the most logical limitation upon the powers of local health officers.

Now if all men lived in a condition of savagery, and no man looked to any other man for aid or comfort of any sort or kind, there would be no correlative duties, but as civilization advances not only does one person become more and more dependent upon another, but one community becomes more and more dependent upon its neighbor, and that word "neighbor" may be applied to those who are far distant and yet neighbors.

I need not say that I have in mind largely this question of purity of water supply.

Take the city of New York for example. I don't know how many miles it is from New York city to Croton, but I assume it is fifty. Here is a city fifty miles away from its source of water supply, with its local board powerless to make any order which will be of any effect in the counties of Westchester or Dutchess where that is, and yet absolutely dependent for the life and health of its citizens upon the purity of that water supply; and every locality in this state is in the same position when it comes to the question of attempting to protect its own community against the refuse or sewage of an adjoining community further up the stream, or on the other hand against the acts of individuals in the other community who happen to pollute their water supply—potable waters. Now in that case our statute comes to the aid of the impotent local officer and vests the power in the State Department.

If the matter refers to the violation of a regulation for the protection of water supply, under section 71, the State Board steps in and orders the local board to convene and enforce obedience. All the local officer need do is to refer the matter to the State Department. The State Department at once examines into the nuisance and orders the local board of the municipality which maintains the nuisance to convene and abate it. Nothing could be simpler.

Now, then, on the other hand, in matters of general nuisances not relating to pollution of water supplies, where the source of the nuisance is outside of the officer's territory, the local board likewise has practically no option except to set the State Department into motion. This proceeds of course upon the assumption that upon a communication addressed to the local board of the municipality maintaining the nuisance it refuses to act. The State Department can then take the matter up independently, or if it is important enough, can submit the matter to the governor and proceed by way of the powers conferred in section 3. In fact, this seems to be the only effective method when the nuisance is of so portentous a character as to require all the force of the state to suppress it.

Now, as we have seen, on this subject of general nuisance in the earlier years there was no sufficient public sentiment behind the local boards, and in many instances they were so poorly organized that they were incompetent to suppress local nuisances. But it is encouraging to read in this report for the year 1899, after the work of sanitary organization had proceeded for a decade, that the work of the local boards had so improved that there was little work for the State Board to do in the matter of nuisances; that it had received some complaints where communities could not agree or where there was delay, but that these were easily settled by calling the local board's attention to the complaint and requesting a report.

The law reports show that in many instances local boards in times of emergency commit acts beyond the pale of the law, as by seizing private houses for hospitals, entering upon private lands to erect hospital tents, detention camps and other necessary appliances. We waste no time in discussing these acts, which, no doubt, done with laudable motives, are nevertheless abhorrent to every principle of law and render their doers civilly and criminally liable as trespassers.

Emergencies must be met as they arise, but there are proper and improper ways of meeting them.

The attorney-general gives an opinion which is not only good law but good common sense and absolutely correct, in my judg-

ment, providing these limitations are understood. The attorney-general says that if a drain or sewer in a municipality is a nuisance and the board of health requests the public authorities to abate it, and the public authorities refuse to abate it, that the board, if it is essential for the preservation of the public health and for the suppression of an actual nuisance, may turn in and do the work itself and charge the expense thereof up to the city or village, which is really the occupant of the premises and the maintainer of the nuisance.

Now that is good law and undoubtedly within the powers of the local health board.

If, however, on the other hand, there is no actual existing nuisance due to insufficient sewerage, but it is merely for the general benefit of the community to have a sewer system, and if the sewer system is (as it is in nine cases out of ten) in truth a public improvement and not an act essential to the suppression of a nuisance, then the board of health has no authority of any kind to bind the village or city by ordering any such improvement; but that function must be attended to by the proper authorities of the municipality to whom the legislature has confided such duties.

In 1895 the legislature passed a very laudable act which had for its purpose the destruction of the so-called rear tenements, and the board of health started in and under the provisions of that act declared that certain large tenements in the rear of houses on Mott street were nuisances, and ordered the rear tenements not merely to be abated as a nuisance but to be torn down and carried away so as to leave a clear place in order to better ventilate the front buildings.

What did the courts do when they got hold of that state of affairs? The court held that although these buildings were undoubted nuisances, nevertheless the nuisance existed only because of the use to which they were put. They held that it was beyond the power conferred upon the legislature by the constitution to take away the property of the owner of the rear tenement when at any time he could have discontinued its use as a tenement and turned it into a warehouse.

Now another case, and this will perhaps be of more important application to the gentlemen before me.

In Buffalo an individual maintained certain water-closets upon her premises in the nature of an ordinary double vault, which we shall not attempt here to describe. They became a nuisance. There was no question about its being a nuisance and extremely offensive and prejudicial to the health of the community.

The board of health sent several notices to put in new closets, but these were not obeyed.

Thereupon the health commissioner made an order declaring the closets to be a nuisance, but instead of confining his order to the mere abatement of the nuisance he went further and directed the construction of a new building upon a different part of the plaintiff's premises, placed thereon water-closets of his own selection at an expense of more than $300, thus making new and important improvements upon the premises; made water connections with the new closets, certified the case to the common council, which in turn imposed the expense upon the property in the shape of an assessment of $303.75.

In the meantime, while all this was going on, the offending owner had cleaned out the closets and there was no nuisance whatever.

What did the courts do when they got hold of it? The plaintiff brought an action to set aside the assessment. The city defended it upon the ground that the acts were within the power of the health officer, and in addition set up the amusing proposition that it was a time of great peril because there was Asiatic cholera in some of the seaports of Europe—3000 miles away.

The court discussed the questions, which we have been discussing at greater length than I had expected to; they maintained the right of the health officer to adjudicate the original vault a nuisance, but pointed out that the offending owner had abated it without expense of any sort.

Then, however, they pointed out (what we have pointed out many times before) that when such a nuisance was abated a voluntary act of the offending owner the power of the mmissioner to do anything at all immediately ceased and termined.

We need not discuss it further. The health officer, I regret say, was criticised by the court as hasty and indiscreet, and her criticisms of like import were made upon him. But the ıg and short of the matter was that the assessment was set ide, and that effort to take away the private property of an offending citizen was naturally and properly condemned.

A board of health by giving any order of any kind cannot eate, so to speak, an obligation which will bind any third rson. In other words, if the board of health orders me to ıke a sewer connection so as to abate a nuisance on my propty, and by so doing I move the nuisance further down a ream, and if I in turn am attacked by the owner below for a espass, I cannot fall back upon the board for justification.

This is no idea of my own, but I am referring to a case of an tual occurrence which arose last year in one of our northern unties.

It seems that the plaintiff had a home upon that stream. He ought an action for a perpetual injunction against a hotel eper further up the stream for polluting the water by disarging all his sewage in it. The trial judge found that the scharge rendered the stream impure and unwholesome. Alough it was not used for drinking, nevertheless the court stained the right of the owner down the stream to enjoy the ıter in its natural purity.

Now what did the hotel keeper up the stream do? He atmpted to justify his act and defeat the injunction upon the ound that he had been definitely ordered by the board of alth to discharge his sewage into that particular stream.

Now what did the court say about that? I will read the ›rds of the court, and perhaps this is as complete a statement the limitations of health officers and health boards as we

Now another case, and this will perhaps be of more important application to the gentlemen before me.

In Buffalo an individual maintained certain water-closets upon her premises in the nature of an ordinary double vault, which we shall not attempt here to describe. They became a nuisance. There was no question about its being a nuisance and extremely offensive and prejudicial to the health of the community.

The board of health sent several notices to put in new closets, but these were not obeyed.

Thereupon the health commissioner made an order declaring the closets to be a nuisance, but instead of confining his order to the mere abatement of the nuisance he went further and directed the construction of a new building upon a different part of the plaintiff's premises, placed thereon water-closets of his own selection at an expense of more than $300, thus making new and important improvements upon the premises; made water connections with the new closets, certified the case to the common council, which in turn imposed the expense upon the property in the shape of an assessment of $303.75.

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Now what did the court say about that? I will read the ords of the court, and perhaps this is as complete a statement the limitations of health officers and health boards as we

could discover after many months of inquiry. The court said: "We can find no statute or rule of law which confers upon such board the right to authorize one citizen to create and maintain a nuisance to the injury of another. Such board may have had authority to prevent the defendant from maintaining cesspools, but they could not have compelled him to sewer into the stream; and the argument that if the defendant must obey this injunction he will be compelled to disobey the order of the board, and thus be liable to punishment for so doing, is not sustained by the facts or by the law of this case. No such power as defendant claims for such board can be found in the statutes creating it, nor should any be implied from the powers thereby conferred."

Now, gentlemen, I have completed this list of material—at least I have turned the pages and have gotten at the gist of what I have here, and am prepared to close.

I thank you for your consideration in listening to me so patiently, and only wish that it were possible for me in some way or other to say something original or something which would stick in the memory and give some point to the desultory remarks and disintegrated matters which have passed in review.

Several questions were handed to Mr Taylor, to which he replied as follows:

Some of these questions are easy to answer and others are difficult. I will take them up. There seem to be four or five in the handwriting of one gentleman. I will just read them off and do the best I can with them.

"Has any local board of health the power by law to adopt a resolution prohibiting the existence of pigpens within any corporation during certain months in the year?"

The answer to that is that it depends upon the character of the locality, if it is thickly built up or not, and if the pigpen would be a nuisance; that is a matter to be determined entirely by the surroundings. A question very much like that arose in Flushing and was passed upon by the Appellate division of the Second department, and I can give no better answer than the

court gave under the circumstances. They held in that case that in a village (I suppose Flushing is a village, although I believe now it is a part of the city of New York) in thickly settled portions of the village it was certainly reasonable for the board of health to pass an ordinance declaring that within certain specified territory the maintenance of cowsheds or pigpens (whatever it was) was prejudicial to the public health; and the court itself said, "We shall have to weigh that question and determine it according to the locality." It is dependent upon the nature of the locality itself.

The second question: "Does the law require a signed affidavit in making a complaint by persons against private or public nuisances?"

Well, the answer to that question is obvious. If the question of a nuisance is involved, the board of health can pass upon that nuisance and call it a nuisance upon its own knowledge, the individual knowledge of its members, and it is not necessary to give anybody any hearing or notice of reasons; and if the nuisance is in fact a nuisance the board acts arbitrarily.

In view of that general proposition—I discussed that case in Yonkers of a dam—the Court of Appeals have laid down very broad rules upon that proposition and have declared the right of the board of health, where there was an actual nuisance, to suppress it arbitrarily without any notice to anybody and without any other evidence than the mere knowledge of the members of the board themselves. In fact, under that proposition of law it would seem that no signed affidavit at all was necessary for any purpose where the mere obligation of abating a nuisance was concerned.

In this case, which one of the gentlemen has called to my attention and which seems to have interested health officers extremely, this case of Mrs Cartright *vs* The City of Cohoes—that case which vindicated the right of a health officer, after serving notice, to go on to this woman's property and tear up the boards and throw chloride of lime into the privy vaults and fill them up and wipe them out of existence as vaults—predicated upon the fact that the board of health in doing that had gone

far beyond what they were required to do. They had given this woman four notices that she was maintaining a nuisance and notice to abate it within five days. She paid no attention to that. Then they gave her a notice of a resolution of the board in which she was ordered to go before it and show cause why the privy vaults should not be filled up. She failed to come. Then they took evidence of all sorts of people and thereafter, proceeding on the strength of that evidence, they adjudicated this to be a nuisance and then sent another notice that if it continued to be a nuisance they would abate it, and told her to close it up and abate it within five days. She paid no attention to that. Then the health officer and his laborers at once turned in and did it himself. After telling that story the court wound up with these two propositions: that the board was not obliged to hear anybody, and that it could have acted upon its own inspection and knowledge of the premises, citing this Yonkers case and another one.

## ABSTRACT OF A PAPER ENTITLED DIAGNOSIS OF THE INFECTIOUS EXANTHEMATA

By Dr. F. C. Curtis

The immediate interest in this subject loses some of its force before this meeting, compared with what it had when from time to time we have been face to face with an outbreak in a locality the nature of which was of deep concern, but it may be sharpened by reflection by some of us on past experience and the chances of its reenactment.

Of the exanthematous diseases, two especially present points for consideration by the health officer: (1) smallpox; (2) scarlet fever. The former stands for the type of the papulo-visicular eruption; the latter for the maculo-squamous type. The diagnosis of smallpox from the diseases with which it may be confounded is of by far the most vital importance.

Until within the last three years there has seldom been controversy as to the diagnosis of smallpox. There have, to be sure, been now and then instances when the State Department

has been called upon to settle this question, and there have always been occurring cases of extremely mild, modified examples of the disease which by reason of mildness have been difficult of diagnosis. But we have never had till in recent time such widespread expressions of this disease under a form so modified that often it has been difficult even for those with some experience with it to realize its real nature.

Smallpox has not attained heretofore its importance in health board work by reason of extensive prevalence, for it has been comparatively infrequent of occurrence and a relatively small contributor to the mortality of the state.

In the 17 years which cover the collated records of the vital statistics of this state, from 1884 up to the commencement of the current year, there have been 1278 deaths from smallpox in the state. In some years hardly a single case of it has occurred, and prior to 1901, 308 deaths is the largest number that has ever occurred in a single year. During 1887–8 there was a considerable fatality, and in the latter of these it spread outside the metropolis to five of the sanitary districts, developing in 36 localities, causing 59 deaths, 46 of which occurred in Buffalo. It continued on into 1889, causing 30 deaths, none of which occurred in New York city. Then in 1892–3–4 there was a fresh increase, practically limited during the first two years of this period to New York city, and in the last extending to 25 other localities. There were 700 deaths from smallpox in these three years and 325 in the earlier two years of special prevalence, so that but 250 deaths occurred in the rest of this period of 17 years, an average of 21 deaths a year. But the entire 1278 deaths constituted less than .07 per cent of the total mortality, or hardly more than one death annually to 100,000 population. But of this number 1138 occurred in the city of New York, which from its metropolitan character and seaboard position is constantly exposed to the disease from without, so that the rest of the state is to be credited with only 140 deaths from smallpox for a period of 17 years up to 1901, 86 of which fell upon the two years

1888 and 1894. And when we further note that the large part of these occurred in the more considerable cities it is clear that the experience with the disease until within recent time on the part of health officers and physicians generally has been exceedingly slight. Most medical men never come in contact with it, a fact which is very sharply in contrast with conditions existing prior to the introduction of vaccination, when it was a disease of constant occurrence. Osler remarks in an address on the "Record of medicine for the nineteenth century" that at its outset variola was one of the most prevalent and dreaded of all diseases; few reached adult life without an attack. Now it has become so small a factor in the mortality of the state that it is hardly considered as such. For periods of years it has not been known and large areas of the state have never experienced it. Yet it is doubtless true that hardly any disease has caused more dread when it has threatened and none has been more costly in the outlay for its suppression whenever it has appeared. Representatives of some localities in this conference can bear testimony to this from recent experience.

In 1898 smallpox may be fairly said to have entered upon a new phase in its history in this state, and in fact throughout this country. So far as the state's experience goes, it was in May of that year imported from the southern states by a traveling troupe which exhibited at 20 places before it was detected, and as a result was distributed in 14 counties in the western part of the state; 320 people were known to have taken the disease, and the outbreak lasted for more than a year. The reason for this prolonged prevalence and wide distribution lay in the new type of the disease. This new type was chiefly in the almost universal fact of mildness, which is fully attested by the fact that not a single fatality occurred in the state save one in New York city. Again and again we discovered localities where it had prevailed for several weeks without recognition by the local physicians. As a consequence it spread to adjoining towns and new foci were constantly developing.

The reason for this failure of physicans to recognize it was partly because most of them never saw the disease. For five years, with the exception of 1894, there has not been a death and hardly a case of the disease anywhere in the state outside of the metropolis—a fact, by the way, which speaks volumes for the protective value of vaccination. Despite the lack of opportunity for seeing it no physician would fail to recognize a well-marked case of smallpox as soon as it became fully developed. Here, however, were numbers of cases seen by all the physicians of a village throughout their entire course without recognition, because of their deviation from the typical form, chiefly by reason of mildness. In truth I have found many persons and even entire families who had had the disease without having been seen by a physician.

This epidemic, traceable to the one source of importation of 1898, lasted till the following midsummer. But we continued to have sporadic cases during the following 12 months, 30 different places being reached by smallpox brought from outside, and from one single case to many, of which latter the brickyard outbreaks in the Hudson valley are an illustration. Among these six deaths occurred. Finally, after three months' freedom, in November last an epidemic started in the eastern part of the state, originating in identically the same way as that of 1898, by a traveling troupe, and our experience with it was duplicated. With three established foci it spread to more than thirty places and lasted for six months. At the same time we have had developments of the disease in forty or fifty places from other sources, brought in to us from surrounding states and Canada, so that up to last August, when there was a material abatement, the past year has been one of our most serious in smallpox experience. It has caused this current year 407 deaths, of which 386 occurred in New York city; lingering long in some places it has been the cause of large loss in sickness, death and pecuniary outlay. At this moment there are but few cases anywhere in the state.

The question has been raised as to whether this disease of recent years is really smallpox. It has sometimes been main-

tained that it is a new disease and the name "Cuban itch" has been largely in vogue. It has also been regarded as an analogue of Rothelm and the so-called "Fourth disease" in their relation to measles and scarlet fever. The former of these terms has doubtless arisen from its contemporaneous occurrence with the Cuban war and its suggested importation.

The surgeon-general of the United States Marine hospital service says that he is aware of no disease called "Cuban itch" which could be mistaken for smallpox. The name appears to me to have been suggested partly by the occurrence of the lesion between the fingers somewhat resembling scabies, although I am sure no one on reflection could satisfy himself of any relationship between this and scabies of whatever sort. Neither is it a separate disease standing between variola and varicella, because its behavior is entirely that of variola. It renders a person immune to variola; it is prevented by vaccination; it effects immunity to vaccinia; it occurs to those who have had varicella; it propagates in some of those exposed true and fatal variola. I personally have seen ample proof of this. All competent observers unanimously agree that it is smallpox. In fact it surely is variola of a benign type long ago described by Van Swieten and others, generally breeding true to its type and aborting in the vesicular stage of eruption. Why it has established and followed its type we might perhaps learn if we could trace the pandemic back to its beginning and source. But we are not without an analogy to it in other eruptive diseases, notably scarlet fever, which for the past five years has prevailed very widely but with a fatality hardly half that of the previous years.

It is my impression that it tends to recur to its normal severity if it lingers long in a community. Its mortality this year is certainly greater relatively than it was earlier. To refuse to accept that the disease is variola is a dangerous mistake.

*Diagnosis*—In outlining the distinguishing characteristics of this disease I speak chiefly from my own experience, and note especially the point where physicians have failed, and these con-

spicuous marks which are of essential aid in diagnosis. It has been chiefly confounded with chicken pox, and sometimes the diagnosis between them is puzzling. There are numerous other diseases which I have found, generally with little good reason, mistaken for it.

Let me note the salient facts regarding smallpox: It is an acute exanthem, affects chiefly adults, has a well-marked initial fever lasting three days, defervescence with the coming of the cutaneous lesions, an eruption first and most abundant on the face, wrist, hands and forearms, the eruption primarily a papule, the papular quality continuing after vesicle forms and lasting as a stain or punctate scar. The course of the eruption has generally been to abort after vesicle forms, but sometimes it goes on to become a pustule with return of the fever; in any case, however, the lesions last for three weeks as unabsorbed indurations, and stain continues for a longer period.

With such a series of conditions no diagnosis except that of the exanthem smallpox is possible. But often there are some of them much modified. What are essential factors of diagnosis, especially from chicken pox?

1 *Age*—If an adult the disease is almost necessarily not chicken pox, for we well know that it is very exceptional that adults have chicken pox. I emphasize this because repeatedly this fact has been overlooked. A general epidemic of chicken pox among adults is quite impossible.

2 *The initial fever*—This is marked and lasts three days even in mild cases, subsiding then as the eruption appears. It need have no other special characteristic, but may be quite that of a severe cold. On the other hand, chicken pox will have slight initial fever, if any.

3 *The eruption*—This appears at the end of the third day, and the subject often feels well enough then, if not sooner, to leave his bed. The eruption will be a *papule;* this is the chief fact about it. It will be a firm, solid, reddish elevation and will continue so for 24 hours. As it enlarges vesicle forms, but it is still papular, as can be determined by touch.

I know that this may sometimes be a matter of close judgment, and that some of the vesicles of chicken pox may have a congestion at the base which may be confusing, but the point of view is always that the primary quality of the smallpox lesion is a papule, while that of chicken pox is a vesicle from the commencement. Be governed by the lesions on the face and hands, for on the abdomen the papules of smallpox may be only ill-defined.

4 *The site of eruption*—The eruption will appear first and be most abundant on the exposed surfaces of the body. The face and wrist will show it first. On the face perhaps the upper part of the forehead and the central anterior part of the face will be most affected. The wrist, the back of the hand and the forearms will next to the face be first and most abundantly the site of lesions and they will be best marked there. The palms and also the soles of the feet will be very likely to show lesions. The *palm* is a site peculiar to smallpox and its involvment is almost absolutely diagnostic of smallpox. It is almost never reached by chicken pox, and I recall only one or two instances. Next in site come the legs below the knees and the upper part of the trunk.

The roof of the mouth is very often affected, but its diagnostic value is discounted by its frequently being the site of the chicken pox lesions as well.

Contrast these symptoms with these of chicken pox. Its subject is rarely an adult, the initial fever is trifling and lasts less than a day, the eruption from its very inception is a vesicle, and it comes in crops, comes most abundantly on the body, and rarely has any induration at its base.

In the mitigated smallpox of to-day cases may be met with rarely in which the initial fever is trifling and unnoticed, and the eruption may be limited to half a dozen lesions of quite indefinite character, soon absorbing. These are puzzling. But I feel that certain symptoms are on close study reliable, and in the absence of all else we may trust to the papular quality of the lesion, to its size, and to its not coming in crops, and to

their prolonged persistence even when slight. But generally a better basis of diagnosis will exist. Never forget that severe smallpox may be contracted from exposure to one of these mild cases.

Passing to the maculo-squamous group of the exanthemata we come to diseases concerning which there is a larger indifference because vastly more common. In the last 16 years there have been 21,000 deaths from scarlet fever and 17,000 from measles. Of the number of cases of either of these or of Rothelm we have no definite data, of the last few if any deaths having been reported.

A very noteworthy fact is that the mortality for scarlet fever has fallen during the last six years to one-half that of the preceding 10, from 1600 deaths a year to 800, and the fall was very abrupt and the ratio very uniform, save that in most recent time it is lowering still more. Measles go in cycles of prevalence, and having had three years of decrease is now having its year of increase. But scarlet fever is uniform. Why in recent time it is so mild I do not know, for if the morbidity returns are to be accepted it has been exceedingly prevalent. The question arises in my own mind whether infrequently the repeated outbreaks have not been of Rothelm instead of scarlet fever, although I am quite confident that there has existed a scarlet fever of true character but exceedingly mild and benign.

The diagnosis between mild scarlet fever and Rothelm I will only give a few words to, for it is more of scientific than practical interest and it is sometimes quite difficult.

The identity of the latter is doubted by some but is surely to be accepted. In fact a so-called "Fourth disease" has been proposed, though not yet recognized.

A difficulty with Rothelm is the variableness of its symptoms and lack of those which are essentially diagnostic. Enlargement of the post-cervical and other glands is very constant, but this may occur not only in scarlet fever but even in simple dermatitis or heat rash. Throat lesions are generally slight, but the angina may be as severe as in scarlet fever; and the same is exceptionally true of desquamatous. It is generally mild but *some outbreaks* are severe.

I would suggest these points for diagnosis: Rothelm is more strictly endemic and limited to a community, sporadic cases being improbable; affect adults; affect those who have had scarlet fever and also measles; the eruption is less general or uniform and more in blotches than with scarlet fever; is of a bright red color, without the punctate points, and prolonged blanching with red points of papillary engorgement on pressure; seldom shows the strawberry tongue, and albumenuria is infrequent; recovery is the rule, death occurring only in old or feeble subjects.

It is not safe to make the diagnosis of Rothelm loosely, but when it is fully justifiable there is certainly much less need of stringent and prolonged quarantine and disinfection than is called for by the graver disease, scarlet fever, and with careful discrimination I have no doubt that the mortality reports may be amended.

I have undertaken to picture the salient and essential diagnostic points between the two main types of the exanthemata and I have for this occasion grouped them—the papulo-vesicular and the maculo-squamous. I have drawn entirely on my own personal observation in outlining them, and they are those which I have found most helpful to health officers with whom I have counseled.

## DESCRIPTION OF THE NEW ANTITOXIN LABORATORY

By Dr. H. D. Pease, Director

Mr. Secretary and gentlemen of the conference—I wish to make a few remarks about the new laboratory which has been established by the state of New York under the direction of the State Department of Health. A liberal appropriation was made by the last legislature and became effective the first of October, so that you see we have hardly really begun.

Through a private arrangement we were able to get the stable and the laboratory in working order, so that we actually began work on the first of October.

The work to be done under this appropriation is the production and testing of diphtheria, tetanus and other antitoxins. Naturally we will begin with the antitoxin that is the most valuable, that is the best established—the diphtheria antitoxin. Having established that and put it on a good working basis we will begin with tetanus. And then the appropriation allows, and specifically demands, experimental work along the lines of research for various infectious diseases.

Now the benefit that the state is to derive from this laboratory is in the way of free distribution of diphtheria antitoxin, and such distribution will be through the health officers of the different localities throughout the state.

The procedure that we anticipate inaugurating will be this: Antitoxin manufactured here will be distributed to such localities as require it, the health officer of that district having charge of it. If the district is a small one and comparatively free from diphtheria, we will probably send antitoxin to that district only upon the request of the health officer. In districts where it is prevalent constantly the antitoxin will be distributed and will be kept on hand by the health officer of that district.

The persons who receive this antitoxin will be such cases as are unable to pay for it. The laboratory and the Department have no intention and are not permitted to sell antitoxin. It will be for free distribution to those who are unable to procure it in any other way.

The tetanus antitoxin will probably not be ready for distribution for some time to come. That will demand considerable experimental work, and the quality of it at the present time, as it is now made by various laboratories, especially in this country, is not as good as we would like to have it, several of the laboratories, more particularly those connected with state boards of health, especially in Massachusetts, having already abandoned the making of tetanus antitoxin on account of the great difficulties connected with it.

It will be our special object to undertake to procure and manufacture as good a tetanus antitoxin as is possible.

Antitoxin for diphtheria will probably not be ready for di tribution before January.

Later on there will probably be some recommendations mad by the Department as to dosage and such other points as ma be of benefit to those who are using it. As a matter of fac we shall probably recommend that those using it shall use i in large quantities.

That is one of the objects in having the state undertake thi work—that those who are unable to pay high prices for a rem edy that really should be used more than once should be abl to get. Many people have an idea that diphtheria antitoxi should cure a case in one dose. We desire to disabuse th minds of physicians and others concerning that idea. It shoul be used in large quantities, and for those who are unable t buy it, the use of the state antitoxin will enable them to injec as much as will be necessary; and we shall put it up in variou sized bottles, two at least, one containing a very large amoun of the serum and a large antitoxic unit or number of units, and then a smaller bottle for subsequent use.

## THE TRANSIT PERMIT

By W. J. Phillips, Secretary of the Board of Examining Embalmers

The matter of the transportation of the dead is of great importance to the general public. It is important that regulations, with adequate restrictions from a sanitary standpoint be enforced, and it is important that those regulations should be as broad and as humane as possible for those desiring to bury in the family plot their dear ones who have died from home.

Until a comparatively short time ago the regulations and rules for the transportation of the dead differed in nearly every state, and the regulations of the transportation companies in some instances conflicted with those of the state. The undertakers, as well as the railroad officials, recognizing the need of uniform rules throughout the country, arranged to have a conference with representatives of the state and provincial board

health which met at Cleveland, Ohio, June 9, 1897. At that eting there were representatives of the National conference state and provincial boards of health, the American associ- on of general baggage agents and the National funeral ectors association. Uniform rules were agreed upon, and sented to the conference of state boards of health and pted by that body at Nashville, Tennessee, August 19, 1897; sented to the General baggage agents association and pted by that body at Denver, Colorado, October 13, 1897; n presented to the meeting of the American public health ociation and approved by that body at Philadelphia, October 1897, and finally adopted by the New York State Board of alth, February 14, 1900.

Iuch opposition was manifested to the transportation of ies dying of contagious diseases until it was finally demon- ated that the undertaker of to-day is qualified to disinfect ies dying of contagious or infectious diseases, as well as to nfect apartments, bedding, clothing, etc., and to render such ies harmless.

'he embalmer in this state must be licensed and can only be nsed after undergoing an examination prepared and held the State Department of Health.

t developed after the rules were in force a short time that y were unnecessarily rigid and imposed hardships upon the ple.

Vhen the attention of State Commissioner of Health Lewis s called to the matter, he immediately undertook the revision the rules and advised with those best qualified to know the ds of the public. As the result, to-day the new regulations t those in force for the last year or so; those have been ised) for the transportation of the dead in the state of New k are the wisest and most comprehensive in force in any te of the Union, giving ample protection to the public health imposing no unnecessary hardships upon those bound to erve the rules. While the regulations in the several states not identical, still they are all framed on the same lines.

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By W. J. Phillips, Secretary of the Board of Examining Embalmers

The matter of the transportation of the dead is of great importance to the general public. It is important that regulations, with adequate restrictions from a sanitary standpoint be enforced, and it is important that those regulations should be as broad and as humane as possible for those desiring to bury in the family plot their dear ones who have died from home.

Until a comparatively short time ago the regulations and rules for the transportation of the dead differed in nearly every state, and the regulations of the transportation companies in some instances conflicted with those of the state. The undertakers, as well as the railroad officials, recognizing the need of uniform rules throughout the country, arranged to have a conference with representatives of the state and provincial boards

health which met at Cleveland, Ohio, June 9, 1897. At that eting there were representatives of the National conference state and provincial boards of health, the American associon of general baggage agents and the National funeral ectors association. Uniform rules were agreed upon, and sented to the conference of state boards of health and opted by that body at Nashville, Tennessee, August 19, 1897; sented to the General baggage agents association and opted by that body at Denver, Colorado, October 13, 1897; n presented to the meeting of the American public health ociation and approved by that body at Philadelphia, October 1897, and finally adopted by the New York State Board of alth, February 14, 1900.

Much opposition was manifested to the transportation of lies dying of contagious diseases until it was finally demonated that the undertaker of to-day is qualified to disinfect lies dying of contagious or infectious diseases, as well as to infect apartments, bedding, clothing, etc., and to render such lies harmless.

The embalmer in this state must be licensed and can only be ensed after undergoing an examination prepared and held the State Department of Health.

It developed after the rules were in force a short time that y were unnecessarily rigid and imposed hardships upon the ople.

When the attention of State Commissioner of Health Lewis s called to the matter, he immediately undertook the revision the rules and advised with those best qualified to know the eds of the public. As the result, to-day the new regulations t those in force for the last year or so; those have been ised) for the transportation of the dead in the state of New rk are the wisest and most comprehensive in force in any te of the Union, giving ample protection to the public health l imposing no unnecessary hardships upon those bound to serve the rules. While the regulations in the several states not identical, still they are all framed on the same lines.

In some states they are more rigid, and in Michigan they are more liberal than in New York.

It is thought advisable on this occasion to make a simple explanation of the new rules for the transportation of the dead.

Every dead body that is transported by railroad or boat or any other transportation line must be prepared by a licensed embalmer of the state, who is registered under chapter 555 of the laws of 1898 with the local board of health where such embalmer practices, except those cases provided for in rule four, which reach their destination within 30 hours after death. This rule provides for such bodies as are removed from hospitals, state institutions, etc., to be prepared at home for burial. Bodies dying of diseases that are not contagious, infectious or communicable, or from other causes and do not reach their distination within the 30 hours, must be prepared for transportation by being properly embalmed by such a licensed and registered embalmer.

Bodies dying of typhoid fever, puerperal fever, erysipelas, tuberculosis and measles or other communicable diseases and not mentioned under rules 1 and 2 of the regulations must be properly embalmed and disinfected and incased in a sound coffin and outside box, except when the body does not reach its destination within 120 hours after death the casket or outside box must be hermetically sealed.

In the case of bodies dying from the above-mentioned causes a transit permit may be issued upon the certificate of the attending physician.

In case of death from diphtheria (membraneous croup), scarlet fever (scarlatina, scarlet rash), glanders and anthrax, the body must be prepared for transportation by being thoroughly embalmed and disinfected, bandaged in cotton at least one inch thick and incased in a hermetically sealed casket and overbox, which preparation must be certified to and approved by the local health officer.

In the case of bodies dying of smallpox, Asiatic cholera, yellow fever and typhus fever, or bubonic plague, transportation is

absolutely forbidden, except upon a certificate sworn to by the undertaker that the body has been properly prepared in accordance with rule 1 of the regulations, which provide how the body shall be prepared, and upon a certificate from the local health officer that the body has been properly prepared in accordance with the rules, both certificates to be approved by the state commissioner of health.

In the case of transportation of bodies dying of smallpox, asiatic cholera, yellow fever, typhus fever, bubonic plague, diphtheria (membraneous croup), scarlet fever (scarlatina, scarlet rash), glanders or anthrax, the health officer at the initial point of the journey must notify the health officer at the destination of the proposed transportation of such a body, advising him of the date and train upon which such body is expected to arrive, so that proper precautions may be taken for the reception of the body.

As the rules of our adjoining states prohibit the transportation of bodies dead of smallpox, Asiatic cholera, yellow fever, typhus fever, and bubonic plague, no permit can be issued for the transportation of bodies dying of those diseases beyond the borders of the state of New York.

In cases of contagious or infectious diseases the body must not be accompanied by persons or articles which have been exposed to the infection of the disease unless certified by the health officer as having been properly disinfected.

The third coupon attached to the new transit permit is only intended for bodies that pass through the city of New York and other large cities requiring a record of bodies passing through such cities in transit, and should be detached if not required from the permit before the permit is issued. Transit permits may be issued by any officer authorized to issue burial permits, but in case of death from the diseases mentioned in rules 1 and permits can only be issued upon the certificate of the health officer in accordance with those rules.

Inquiry has been made as to the form of permit since this paper has been prepared.

The new permit is issued singly. It is not in duplicate, the same as the permit that has been in use for the last year and a half. The new form of permit and the new regulations can be had by application to Van Benthuysen & Company, Albany.

After considerable discussion Mr. Phillips said:

From the discussion it appears that health officers and registrars do not quite understand the arrangement. The causes of death and the different rules under which the bodies are transported are divided into five classes. The first class is those who die from diseases that are not contagious and reach their destination within 30 hours. No preparation, however, is required in that case. The permit is simply issued upon the certificate of death.

The second class is those bodies that die from diseases that are not contagious, or from any other causes—accident if you like. Those bodies are prepared by being properly embalmed and incased in a casket and overbox. No certificate or O. K. is required on that.

The third class is consumption, measles, typhoid fever and diseases of that class. They are prepared by being properly embalmed, disinfected and encased in a sound coffin or casket. In the event of those bodies (those dying from consumption, measles or puerperal fever) not reaching their destination within 120 hours, they must be hermetically sealed in a zinc, tin or copper-lined box or coffin.

Scarlet fever, diphtheria and diseases of that class (that is the fourth class) must be prepared by being properly embalmed, disinfected and bandaged in cotton at least one inch thick and enclosed in a casket or box that is hermetically sealed, and that must be done upon the certification of the health officer in the locality.

In the event of smallpox, Asiatic cholera, yellow fever, typhus fever and plague, those bodies cannot be shipped unless they are properly embalmed, disinfected, wrapped in cotton, bandaged, and encased in a hermetically sealed casket, which work must be upon the sworn certificate of the undertaker.

other precaution taken is that the health officer must know : it has been properly done, and in the event of having both hese certificates, then the stamp or approval of the state missioner must be put upon it.

is not necessary that the permit should be made out and nped O. K. by the undertakers, the health officers and the e commissioner in Albany—it would take two or three days o that; but if the health officer wires the state commissioner ıealth: "We have a body to be transported, dead of small-, properly certified by the undertaker and I certify that it is perly prepared," the state commissioner of health can wire back, "You have my permission to transport the body." So :e is no cause for delay whatever.

he causes of death are divided into five classes, and those the five. The only things requiring the O. K. of the State ıartment of Health are those diseases last stated; and in se cases I have had experience as an undertaker 20 years, I have never been called upon to transport a body dead of se diseases. I never had a case of typhus fever or smallpox.

## BUREAU OF PATHOLOGY AND BACTERIOLOGY

BY DR. GEORGE BLUMER, DIRECTOR

t is the desire of the commissioner that I should explain to the object and some of the methods of the Bureau of pa-logy and bacteriology of the State Department of Health. · object of this department is to give to the health officers the villages and smaller towns the opportunity to carry on tain lines of investigation which are furnished in the larger es by the local health boards. I refer to the examination :ultures from suspected cases of diphtheria, examination of tum from suspected cases of tuberculosis, examination of ɔd for the Widal reaction and the bacteriological examina-ı of water.

'or the examination of suspected diphtheria cases the Depart-ıt furnishes a box containing a sterilized swab and a steril-l tube of culture media, together with directions for the same, a blank giving the name and age of the patient, and certain

other necessary data. These outfits can be procured by any health officer on applying at the central office. There are one or two precautions in connection with the use of these tubes to which I would call your attention. In the first place, health officers should not keep the tubes in their offices for any length of time, as they are very apt to be contaminated and are then of no value. A health officer should apply for a fresh tube in each case. Should the tube be found to be contaminated on its arrival, the throat should be swabbed with the swab and the outfit should be sent back to the laboratory without inoculating the tube. This is a practicable method of testing such cultures, because the diphtheria bacillus is an organism which stands drying for a considerable length of time. When this method is employed, however, some time must necessarily be lost, as the swab must be inoculated onto a tube on reaching the laboratory, and then the tube must be incubated for some twelve hours. A few complaints have been made regarding the length of time which is required before a report can be received. This must of necessity be the case when the tube is received from the outlying country districts, and furthermore, it should be remembered that the tube must generally be incubated for 10 or 12 hours after its reception before being reported on.

Regarding the examination of the sputum but little is to be said. The Department furnishes for collection of sputum a screw top glass receptacle contained in two coverings. The sputum best suited for examination is that expectorated in the early morning.

Regarding the collection of blood for the Widal test, it is simply necessary to prick the ear and collect the outflowing blood (two or three drops) upon a clean slide. The drops should be separated from one another, and the blood should not be smeared over the slide as is sometimes done. The reason for this is that the blood must be diluted in definite proportion before being used, and it is much more easy to make an accurate dilution when we know we are dealing with a single drop of blood than when we are dealing with an unknown quantity

smeared over the slide. I would further call your attention to the fact that the Widal reaction does not appear in a great many cases till the end of the first week of the disease, and in some cases not till later.

Both in connection with the Widal test and in connection with the examination of sputum for tubercle bacilli it is desirable not to depend upon a single examination if the report is negative, but to subject two or three specimens from the same patient to examination.

For the examination of water the Department supplies properly sterilized bottles with directions for the use of the same. I wish in this connection simply to call your attention to one fallacy which seems to be quite common even among professional men. We not infrequently receive letters from health officers stating that a given water is supposed to have given rise to an outbreak of typhoid fever and asking us to isolate the typhoid bacillus. It is a well recognized fact among bacteriologists that the isolation of the typhoid bacillus from water is almost impossible under ordinary circumstances. What we attempt to do at present is to find evidence of organic contamination in the form of colon bacillus, which presumably is always present when the typhoid bacillus is present. The presence of the colon bacillus in water is indicative of organic contamination, though not necessarily of contamination with human excreta. The organism is such a widespread one that its mere presence can not be regarded as indicative of contamination with human excreta, but its significance must be estimated by taking into account the local conditions in the neighborhood of the source of the suspected water.

**Afternoon Session**

FRIDAY, *October* 25, 3:20 P. M.

## SOME ESSENTIALS OF A REGISTRATION SYSTEM

PROF. WALTER F. WILCOX, UNITED STATES CENSUS OFFICE

Gentlemen—I have been asked by the Commissioner of health to present to you some results of the work of the Census office,

so far as it relates to the question of public health, especially in New York state.

The object of this conference is to consult together regarding the public health of New York state and the means for its improvement.

Each person is well aware of his own health, at least in case he does not possess that inestimable boon. Private health thus is a matter of individual consciousness, but no person can tell from his own feeling or observation what is the state of the public health, even in the small community where he resides. It is only when unusual disturbances arise through epidemics or otherwise that the private citizen or the practicing physician becomes aware that conditions are abnormal. Even then his experience does not enable him to compare one such period with another, far less to detect the slow changes whereby the health of the community may be gradually improving or deteriorating. Hence, common observation, whether of the private citizen or of the physician with large practice, affords no trustworthy indication under ordinary circumstances of the health of the community wherein he resides, must less of the city, county or state. To ascertain, therefore, the present state of the public health common observation must be supplemented, and it is for this purpose that the work of registration and the interpretation of registration figures in vital statistics has been devised. It is no exaggeration to say that the sole scientific test of the healthfulness of the two places or of two different periods is found in a thorough and scientific study of the vital statistics for these places or times. As all sound projects for improvement should be based upon a good knowledge of the conditions, it seems to me the study of public health must rest for one of its main supports upon careful and thorough work in vital statistics.

Nearly every educated man is now aware that the primary statistical device employed for measuring public health of diverse communities or of the same community at different times is found in the death-rate, i. e., in the average number of persons

ing annually to each 1000 of the population. To be sure these ıth-rates are not the last step in the analysis, for many mathetical refinements culminating in a life table need to be introed before the measurement of the public health reaches its hest development. But for the reasons in hand these refinents of analysis may be neglected, and all I wish to speak of he death-rate as thus defined; that is to say, the average num- of persons dying in a year to each 1000 of the population.

'he very definition of this ratio shows that it is dependent n two numbers—the total number of the population at a e and the total number of deaths occurring in a year. The mer of these numbers is derived from the census, the latter m registration records, and the very definition of the death- e, therefore, shows that to obtain it a cooperation is required ween the work of a census office and that of the registration cials, a cooperation which the Census office at Washington ires greatly to foster and develop and on behalf of which I ear before you to-day.

n the study of death-rates as in the careful study of nearly ry statistical problem the introductory question should be ed, Are the original figures for population and deaths which compared correct? Or better, What is the degree of uracy to which they attain? For no statistical return on a ge scale is ever absolutely accurate, except by accident.

he Census office has recently spent millions of dollars in the rt to ascertain the population of the United States. Yet no thoroughly informed would claim that every person residing New York state was counted to make up the population of 8,894 reported by the census, and that this number—more n seven and a quarter millions—contains not one person who not alive and a resident of New York state at the date when name was entered. It is our belief that the work of the lfth census has been more accurate than that of any preng count. But few of us would claim that the published ılts are nearer the truth than one-half of one per cent. It be fairly assumed that the true resident population of New

York state June 1, 1900, was within 35,000, more or less, of that reported by the Census office. This is accurate enough for all scientific uses to which the figures are likely to be put.

I turn now for a moment to the other term of the ratio—the deaths recorded by the registration officers of this state. In treating this subject I should be glad if you would think of me not as a census official having no connection with the registration records of this state, but as until recently a member of the local board of health in one of our smaller cities, and one who as such has been grappling for some years with the difficulties of securing accurate and complete registration of deaths and who appreciates to the full the obstacles in the path of conscientious registration officers.

We have found it hard to secure from physicians in every case certificates of death. We have found it hard to secure from undertakers before interment the burial permit the law requires. A certain number of interments were made in advance of the issue of permits and in only about one-half of such cases was the permit subsequently issued. My experience in this work has led me to believe that to obtain an accurate and complete record of deaths is extremely hard, perhaps harder than to take an accurate census. The census law required the office to obtain not merely the total population of the United States and its various parts, but also to inquire into the mortality and show the death-rate of the United States. For this purpose two agencies were available. The enumerators who were charged to get the facts regarding the living population might also be instructed to inquire of each family visited whether any deaths had occurred during the twelve months preceding the census day, or the registration records kept in many of our states and cities might be copied for the use of the Census office. For about three-fifths of the population of the United States the office was compelled to rely upon the enumerators' returns, the population living on this area having no registration records.

For nearly two-fifths registration records were found, but of varying degrees of completeness. After careful consideration,

it was decided that in parts of the registration area when the low death-rate aroused some doubt that all deaths had been recorded both sources of information should be employed and the results compared.

In New York state both sources of information were employed in parts of 36 counties, including about one-fourth of the total population of the state, and nearly all the area except in the southeastern counties and the Hudson valley.

The basis for selecting these counties was found in the death-rate obtained from the death records. Where that rate was less than fifteen in a thousand, that is, where less than 1-66 of the population was reported as dying each year, the presumption against the rate seemed to the office strong enough to warrant an attempt to verify it by the enumerators. When the enumerators' returns for a given city like Auburn were received they were entered on cards and arranged alphabetically by the name of the deceased. The first record on the registration was then looked for in the enumerators' returns, and if it was found that card was thrown out and the entry on the registration checked. After all the cards had been compared in this way and the duplicates rejected, a second and a third comparison were made by different clerks attempting to detect identical cases under differences of spelling, etc. The remaining cards were then arranged chronologically by date of decease and a comparison made month by month. If the deaths on the registration record were arranged in any other way, such as by age or cause of death, the cards were further arranged to correspond with this arrangement and yet another comparison made.

By these repeated comparisons it is believed that practically every duplicate has been eliminated and every case of doubt, it should be noticed, was decided in favor of the accuracy of the registration record. When all these precautions had been taken in the case of Auburn, it was found that there were 18 deaths among the 503 reported by the enumerators for which no possible duplicates could be found on the registration record, and these deaths were consequently added to the list.

In the entire 36 counties where this method was applied in part or entirely 3149 deaths were reported by the enumerators for which no corresponding entries could be found on the registration records. That is, the addition in these 36 counties or parts of counties amounted to 9½ per cent of the deaths shown by the registration records. The accuracy of registration in the various parts of the state varied from the city of Dunkirk, where only three additional deaths were detected by this process, or less than 2 per cent of the entire number, up to Clinton county, where the deaths reported by the enumerators exceeded by 100 the registered deaths and where the deaths added from the enumerators' returns were nearly two-fifths of the total.

While serious omissions have been shown to exist in the registration records of deaths in New York state wherever the records have been tested, it may be noticed for our consolation that New York is by no means exceptional in this particular. In Vermont, where returns for the whole state were derived from both sources, the omissions of the registration record were more numerous than in the selected counties of New York state. In New Jersey, as in New York, certain counties were selected, the registration records for the others being accepted as correct, but in these selected counties of New Jersey the registration records were found more deficient than in New York. In Massachusetts and Connecticut the state registration returns were accepted without checking. Pennsylvania has no registration returns.

It appears, therefore, that throughout central and western New York the omissions in the registration records of death amounted on the average to over 9 per cent of the total number. These omissions are naturally much less in cities than they are in the rural districts around about.

Thus in Auburn the omissions amount to but 3½ per cent. In Buffalo they amount to 3.8 per cent, while in Erie county outside of Buffalo and Tonawanda they amount to 12.3 per cent. In Rochester they amount to 4.8 per cent, while in Monroe county outside of Rochester they amount to 8.7 per cent, and so on.

If it be admitted, and it seems to me the evidence warrants the conclusion that there are grave omissions in the death records of many parts of New York state, including substantially all the parts which have been subjected to the test, the question arises, How may these records be improved, the trustworthiness of our death-rates established and a sounder basis laid for our efforts at the improvement of our public health? No final answer to this question can be given. It is one that might properly, I believe, be referred to a committee of this conference, provided that the conference should decide to hold future meetings and to constitute committees. The conference, I believe, might profit by the experience of neighboring states and also by the investigations of the Census office which have sought to compare the various registration laws in force in our several registration states and to draft a law which might combine the best features of our American practice in this field.

## STATE AND MUNICIPAL MILK PROBLEMS

By Dr. Ernest Wende, Health Commissioner of Buffalo

The importance of milk as a factor in determining public health should not be overlooked. Its relation to morbidity and mortality is too often and too intimately associated with pathogenic bacterial ferments.

It has been shown by positive data, of sufficient authority to be trustworthy, to have started epidemic visitations. Consequently, to exercise all the functions of an intelligent and benevolent health official, we should justly appreciate its importance and seek to understand its possibilities by depressing it to its true level.

As a matter of fact, it must invariably be looked upon with suspicion when the mortality tables of the various health departments of our cities and villages are consulted, showing clearly that early infant mortality depends largely upon it as a doubtful commodity.

Perhaps one of the greatest fallacies regarding it is the demand for a safe and nutritious diet, believing it to possess

only those elements to be found in a perfect alimentary food without assuming that it generally contains more than is desired—a kind of mixed drink, as it were, or an unsafe beverage of bacteria. The more milk and the less the bacteria the smaller the injury; the more the bacteria and the less the milk the greater the injury inflicted. It is true that it is the one comprehensive article of food which contains within itself all the necessary elements to sustain the normal order of the natural processes of the young without hampering their symmetrically healthy growth. It is the one comprehensive article of food with its elements so combined as to support adult life better than any other known substance, no element required for nutrition in either being omitted. Its indispensableness to health and posterity has been demonstrated.

However, it is likewise a recognized fact that, like no other article of food, it enjoys the heinous tendency of becoming unclean, infected and dangerous, a defilement which occurs most speedily, and that any means affording possibilities for combating certain evils surrounding it are worthy of investigation. Its influence as an agency for the conveyance of contagion and the production of certain deadly disorders is widely known, yet this knowledge has not produced the effects it should have done in practice. The local and state health authorities are not sufficiently explicit in their warnings against milk pollution, or stringent enough in their measures to guard against such machinations of the devil, as milk supplied by irresponsible persons, milk handled by people suffering with tuberculosis, syphilis, typhoid and scarlet fevers, diphtheria and other contagious diseases; from tuberculous or otherwise diseased or worn-out cows; from cows that have calved within one week; from cows fed on slop, garbage or malt. The relationship between cow food and the milk produced has been closely studied, and if the well-known conclusions are followed, the cow can be depended upon to do her duty in complying with the requirements of the state standard. With an equal chance she should put the dairyman to shame, and in her modesty blush

the recognition of his shortcomings in her behalf and ward the public.

Further, from milk that has come in contact with unclean ensils; transported in dirty cans or stored in vessels glazed ith injurious materials as copper, lead or zinc; from filthy iries; from farms with filthy accumulations, outhouses, barnrds and stables in close proximity to dwellings. When the asses of the people shall learn and appreciate the full signifiince of this fact its appalling truth will then be a thing of e past, for the populace and their servants, whether public private, will vigorously apply the sure means of prevention, they are merely a premium on carelessness, filth and disnesty. Even without any unpleasant smell and flavor of ecomposition to give warning, the products of microbes may virulent. The prevention of milk-borne diseases can only be cured by attacking the virus at its source, before it has had me to disseminate itself by means of the milk, whether at the iry of the producer, at the milk house of the dealer, or at e home of the consumer.

Greatly as it is to be lamented, it is not difficult to see how is remarkable defect of knowledge has been incurred by the ate through its neglect of proper surveillance over the milk dustry.

We possess evidence, perfectly understood, gained by experice bearing potentialities for evil, which are unbounded in the ssemination of the virus tuberculosis, diphtheria, scarlet and phoid fevers, in the generation of toxic bacterial products ving rise to acute diarrhoea, cholera infantum, and tyroxicon poisoning, and in the production of inanition, malnutrion and marasmus, through the medium of an unwholesome ilk supply.

Numerous records of such epidemics are at hand in which the read of infection was definitely traced to the dairy and its rroundings, contracted from the mouth, nose, throat, skin and ischarges of those in charge, and recently convalescent or arcely recovered.

Thus the materies morbi, which is very tenacious of life, clings to the hands and clothes of the careless who, in turn, pollute the water, and then cause it to lodge in the cracks, crevices, seams and inequalities of the walls, floors and crevices of the insanitary milk house, storage box, cans and bottles, there to thrive and multiply for the transmission to do infinite mischief, and the slaughter of the innocent.

Notable among these outbreaks we make mention the 95, described and tabulated by Hart, of England, of which 48 were typhoid fever, 32 scarlet fever, and 15 diphtheria; and the 90, collected and tabulated by Freeman, of this country, of which 53 were typhoid fever, 26 scarlet fever, and 11 diphtheria.

To confirm, as well as for the purpose of supplementing these numerous instances of the spread of infection by an improper milk supply, seven outbreaks, parallel in relationship, of which four were typhoid and three scarlet fever, that occurred in the city of Buffalo since 1893, may be profitably cited.

It was in the fall of this year that we encountered our first visitation of a contagious disease traceable to and rapidly extending through the instrumentality of the milk dealer's route. Here likewise the seeds of infection were brought to the persons unfortunate enough to come in contact with the contaminated milk from a remote centre, and at the first opportunity the individuals infected others, and so the evil spread.

It was casually observed that a group of scarlet fever cases prevailed in such association that it was seemingly apparent, according to every reasonable expectation, that they all depend upon a like source of infection. An investigation was at once instituted, which revealed the fact that 57 children of 26 separate and distinct families had succumbed to scarlet fever, all of whom had procured their milk from the same milkman whose milk house equipment, help and family were all scrutinized with the result of finding two cases in his immediate household.

Inasmuch as nothing could be discovered of an insanitary or causative nature with his own outfit, environment and mode of handling, the inquiry was further carried back to the source

of milk production—the dairy farm—with the sequence of detecting two cases of scarlet fever, in the desquamating period, occurring in a child aged seven and a young man of nineteen.

The latter, who still had large flakes of cuticle pealing from the extremities, must be credited with his share of the misfortune, for devastation followed the wake of his labor.

It was he before being thoroughly restored, ignorant of the danger caused by the stray particles of shed epidermis thickly peopled with the infective bacteria or their spores, that did the milking, washed the cans and transported the commodity to the depot for shipment to be received and distributed to the unsuspicious consumer by the city milk dealer.

Here, then, the first demonstrative milk epidemic of scarlet fever in our midst showed a typical case.

The interesting and subjunctive corollary deduced from the research is convincing.

First—That all the facts, brought out by a persistent investigation of the epidemic, pointed to the milk supply.

Second—That the cases appeared almost simultaneously, extending rapidly, and attacking especially those who partook freely of the lacteal fluid.

Third—That only the homes located on a certain milk route were invaded, and those frequently having the best hygienic environments.

Fourth—That happily the wane of the epidemic was equally abrupt following the discontinuance of the mischievous product.

Briefly, this is the unvarnished tale concerning our first recognized outbreak of scarlet fever caused by a contagious poison emanating from a doubtful milk supply. However, it shed much light upon the milk dealers' route as a channel for the dissemination of diseases, and served as a stimulus as well to yet more carefully scrutinize and guard the milk traffic. The most important practical result of this inquiry was the devising and maintaining of a register of contagious diseases in connection with their occurrences upon these thoroughfares.

It is scarcely an exaggeration to say that the assigning of all acute infectious diseases that arise in a municipality to the milk man is an act consistent with the maintenance of health.

It means a system, feasible for daily surveillance, and effective in the protection against frequent infection of the milk consuming denizens.

Such a register is worthy of more than a passing notice. It stands as a silent guardian, watchful of the integrity of the milk, the health and happiness of the home.

No department of health can be considered efficient, much less complete, without it.

This armamentarium, when once adopted, will be the last to be dispensed with, for few things accomplish so much that are apparently so simple. Chemical analysis has a place; bacteriological tests another; but the register takes the place of all in its importance and possibilities.

We may fairly attribute to this innovation the detection of six subsequent epidemics in their incipiency. It made immediate investigation and the prevention of the further spread possible.

This invention, which had its origin in the department of health of Buffalo, immediately furnishes a ready and effectual means for the detection of infection on milk dealers' routes. Appreciating its merits, it is posted daily and thus the healthfulness of the families, supplied by each individual dealer, is constantly watched. As soon as it appears that on the route of any milk dealer infectious diseases exist, an immediate investigation is made into every detail of his business, source of supply, and the conditions existing there, when if justification asserts itself, or even a doubt, his route is suspended until it can be made absolute that his is not the source of danger.

We cannot be too thankful for this result and we ought not to neglect its obvious lessons. In city milk routes much remains to be done in order to bring the sanitary conditions to a level with our knowledge. We cannot plead ignorance; apathy and indifference are the foes to be most dreaded.

On September 4, 1894, we were assured by the records of the register that 19 cases of typhoid fever had developed with wonderful rapidity in families served by a milk man living in a sparsely settled section of the northern portion of the city.

The health department forthwith instituted an investigation which showed the startling result that the wife of the milk man, surrounded by unfavorable conditions, was ill with the fever; however, on the borderland of recovery.

She was still being nursed and cared for by her husband, who likewise was handling the milk, washing the cans in a most objectionable manner with water produced from an old cistern that had, during the preceding year, been the subject of several sanitary complaints.

Another powerful factor that made the transmission of the disease through the medium of the milk imminently capable was the fact that the patient was not isolated, but cooped up in a small stuffy chamber adjoining the kitchen, in direct communication with the milk room.

It is hardly necessary to say that the sale of the milk was interdicted, the cistern ordered abandoned, disinfected and filled, and everything pertaining to the dairy and the premises in general placed in a sanitary condition.

By this and other procedures the spread of the disease was checked, no further cases occurring upon the route.

On August 21, 1895, the department again, through the intervention of the register, discovered 18 cases of typhoid fever intimately associated with the milk route of a dairyman located on the outskirts of the city.

An inquiry into the cause and circumstances of the outbreak revealed that his premises were not what they should be by reason of defective drainage, and badly constructed, ill-ventilated and unclean milk house, conditions as might be expected most favorable for the reception and multiplication of the typhoid bacillus.

The peculiar interest connected with the cases was that the wife of an employee had propagated the infection that had con-

taminated the milk, through the agency of her husband, who at night not only acted as nurse but fulfilled the other necessary household duties, and who during the day handled and delivered the needed product to the confiding consumers without changing his clothes for days or taking any precaution whatever.

The sick wife was immediately removed to the hospital, and the insanitary conditions so promptly changed that, by August 30th, just nine days after the discovery of the first, no further cases were reported.

Again on March 9, 1896, the register indicated the existence of 14 cases affected with typhoid fever on the route of a milkman residing in the western portion of the city.

Here we acquired the information that the milk room was in the rear of the first floor of the building which he occupied.

Several months previous a case of typhoid developed on the floor above, in a separate family, and ran its full course.

These cases undoubtedly arose in consequence of the insanitary conditions prevalent in and about the building, and for like reason the contagion remained active until finding expression in the dairyman's route.

A quick subsidence of the epidemic followed on the suppression of the milk through cleansing and disinfection.

On February 27, 1899, in consequence of the rapid development of scarlet fever (some 20 cases within four days) an investigation was made, and the source of the trouble traced to a dairy farm near Clarence, N. Y., 20 miles from the city, from where the milk supply was received.

It was ascertained that at this place four persons were infected with scarlet fever, one of whom, a convalescent, was through ignorance of the danger and possibilities of his acts engaged in milking the cows and handling the cans and utensils.

Action was taken at once to prevent further injury from the milk with the result of arresting the further development of cases by March 15th, when but four cases were reported. No further cases were then reported till April 4, 1899, when we received reports of two additional cases, these being the last.

In April of the present year the register revealed the fact that scarlet fever was prevalent on another milk route, 12 cases, representing seven families, being reported from April 21st to 29th.

The investigation in this case was carried to the source of supply four miles from the city, but failed to reveal positively the source of the trouble.

However, through disinfection of the dairy, milk cans, bottles and utensils it resulted in checking the further spread of this threatened epidemic, showing conclusively that the milk was the cause of the mischief.

Again, in August last the register showed that 21 cases of typhoid fever, involving 16 families, had appeared along the route of another milk dealer. Being convinced that the milk was the source of infection, everything pertaining to the handling of the product at this dairy was thoroughly disinfected and further spread of the disease immediately stopped.

No better illustration could be found to demonstrate the condition liable to develop in any section in the present state of affairs, nor to demonstrate the value of this, the sanitary telltale or milk register.

In Buffalo since these methods have been in vogue there has been a decided fall in the mortality ratio of cholera infantum, scarlet fever, diphtheria, and typhoid fever, in spite of her enormous increase in population.

The accompanying table is self explanatory:

DEATHS FROM DISEASES WHICH ARE FREQUENTLY MILK-BORNE

| YEAR | Population | Cholera infantum | Scarlet fever | Diphtheria | Typhoid fever |
|---|---|---|---|---|---|
| 1890 | 260,000 | 348 | 21 | 111 | 105 |
| 1891 | 255,664 | 381 | 67 | 165 | 129 |
| 1892 | 285,664 | 376 | 84 | 177 | 98 |
| 1893 | 300,000 | 568 | 133 | 149 | 112 |
| 1894 | 315,000 | 417 | 85 | 214 | 185 |
| 1895 | 335,709 | 372 | 22 | 242 | 98 |
| 1896 | 350,000 | 321 | 14 | 249 | 68 |
| 1897 | 360,000 | 277 | 21 | 198 | 69 |
| 1898 | 370,000 | 254 | 13 | 85 | 98 |
| 1899 | 370,000 | 187 | 32 | 83 | 88 |
| 1900 | 352,387 | 256 | 31 | 66 | 90 |

I don't mean that the reduction of the death-rate was entirely due to this register, because there were other schemes that are peculiar to Buffalo that had something to do with it; for instance, the abolishing of the long tube nursing bottle. Our death-rate from that cause alone has decreased over one hundred per cent.

Every American, realizing the splendid aspirations and the possibilities of the sanitarian, should take an interest in milk legislation, for the probable results of laws obtained from the state giving plenary powers to the health authorities in matters of municipal sanitation would be its eventual adoption by every civilized nation. It is of vital importance to all educated persons, not only individually, but also as members of the community, in order that there may be aroused in some minds the necessity of becoming better acquainted with the important details of the milk business.

The visitations of an epidemic should not be so readily forgotten. For some time legislation affecting agricultural interests has been jealously guarded by the farmer. Especially is this the case with such measures as relate to dairy productions. Too much attention is paid to the commercial side of the question, and judging from the reports received, this appears to have influenced some of the courts, as indicated by their rulings. It seems almost incredible that pecuniary loss should be given preference in the consideration of a question where human life is in the balance. If existing laws are inadequate or inefficient, they should be immediately remedied. If, then, they are not properly enforced, the blame must rest with health authorities who can appeal any case and carry it to the highest court without loss to themselves, if they deem the case improperly disposed of by any of the trial courts.

In the absence of such protection as outlined, and jurisdiction, the department of health of Buffalo has adopted under my direction a scrutiny, incomplete as it may be, which briefly is as follows:

A record is kept of the conditions that prevail at each dairy supplying the city with milk. This information is obtained solely by inquiry but has been found generally reliable. It includes data of the size, health, tuberculin examination of herds, character of the water, food, health and employees, methods of milking, cooling, cleansing, transportation—in fact, all factors bearing upon the purity and protection of the milk. Additionally, circulars are caused to be sent bearing upon the possibilities and the like of the business. When conditions at the dairy appear prejudicial to the public health from any cause, investigation is made and correction requested.

In the absence of authority beyond the municipal limits, when action for any cause appears necessary for insanitary reasons, with failure to comply with the department's request, the product of such dairy is interdicted at the city line and the dealers to whom consigned notified until such time as the offence is removed.

With this mode of procedure and its results, any city can exercise a large influence upon dairies supplying it, exclude milk from known tubercular herds and obtain sanitary protection beyond its own field of authority.

In conclusion, therefore, the attitude towards the milk industry should be both state and municipal control, operating in harmony under similar principles with the identical object in view, both acting together, forming a system of protection from dairy to consumer.

The state should exercise its functions and control until it passes to within the municipal limits and authority, and should include every feature and detail in all respects of protective sanitation. These features include briefly:

1 The license system, with fee, periodic systematic inspections with revoking power and penalties for dereliction.

2 The inspection system should include inspection of herds (tuberculin tests), foods, animal care.

3 Demand sanitary environment and buildings, correcting existing evils, and examination and approval of plans, pending

erection of new ones, which should comply with a standard of sanitary construction with special reference to specific requirements of the business, viz., separate milking and stabling quarters, proper cubic air space, non-absorbent material.

4 Scrutiny of water supply, standard feeding, health of employees, hygenic care of utensils and cans, cleanliness and protection in milking.

5 Definite rules governing all procedures, particularly as to the cooling process, preparation for market, and in relation to the varying seasons.

6 The differentiation of the various characters of milk by different colored or shaped cans, and being properly labeled with the date of milking, time of shipment.

7 Prohibition of milk preservatives and coloring agents, of adulteration, and of the marketing of milk from diseased, sick or parturient cows, of the use of disinfectants, their necessity implying bad sanitation.

8 The prohibition, particularly of refuse or swill food upon any dairy premises, of any food by reason of decomposition or fermentation, considered unhealthful, and of the association of other domesticated or housing animals with cows.

9 A standard of quality, with periodic testing analysis.

10 Veterinary inspection with distinction and compensation within, and quarantine against the introduction of tuberculous cattle from without the state. It should be as rigid as against pestilence in man, and it is only by this means that the malady can be circumscribed and its bearing on human life favorably influenced.

With this standard of supervision by the state, the municipality should continue the supervision upon the same lines, and which may be outlined as follows:

1 Continuation of the license system with penalties, together with stringent ordinances covering quality, adulteration, sanitary care, and relation to contagious disease contamination.

2 Milk should comply with the state standard as determined by lactometer tests, periodically instituted, as ascertained both *in milk* houses and on wagons.

3 During the summer months milk intended for consumption should not be over 24 hours old, and during the winter it should not exceed 36 hours.

4 Sanitary non-absorbent milk rooms, of determined size, air space, ventilation and light. With specifically constructed, indirect plumbed cooling and storage boxes, and non-communicating with sleeping rooms, privies, stables or other influencing rooms.

5 Wagons properly lettered and numbered, with protection from summer heat, properly iced and delivered in certain prescribed hours.

6 Stringent prohibition regarding intercourse with houses containing contagious diseases, particularly relating to the exchange of milk bottles, and the prohibition of refilling jars en route. The constant surveillance of contagious disease in relation to the milk routes by the means of the "telltale register."

7 Obligatory cleansing of milk utensils by a uniform method, and of cans before returning to the dairy.

8 Special supervision of and discouragement, if not abolishment, of grocery store and similar character of milk sellers, where the business is subordinate to other interests and consequent lack of protective facilities.

9 Until state and city act in unison in this, where interests are identical, the adoption of arbitrary interdiction or destruction, at the city line, of all milk coming from dairies whose conditions or herds may have a deleterious influence upon the milk.

10 Systematic system of reports and with mutual warnings and notification of imperiling conditions.

## TESTING SCHOOL CHILDREN'S EYES

BY DR. P. A. CALLAN, NEW YORK EYE AND EAR INFIRMARY

The honor belongs to James Ware, a London surgeon, of having made the first examination of the eyes of school children to determine the refraction.

In 1803 he examined 127 students attending the University of Oxford and found 32 wearing nearsighted glasses. In 1812 he tested 1300 students of the military school at Chelsea and found three requiring nearsighted glasses to enable them to see at a distance.

During the 40's Schurmayer and Szolalsky interested themselves in the increase of nearsight among scholars in the schools of Baden and Paris respectively, but no testing was done. If any pupil thought that his or her vision was not good, reports were made to that effect.

The first scientific examination was made by Edward von Iager, of Vienna, Austria. Von Iager examined with the ophthalmoscope the eyes of 100 children in a Vienna orphan asylum.

In 1865–66 Cohn of Breslau tested 10,000 school children and found an average of 9 per cent plus nearsighted; 1486 of these children attended village schools and the percentage of nearsight was only 1.4 per cent minus; 8574 attended city schools and the percentage of nearsight increased from the lowest grade of not quite 7 per cent to over 26 per cent in the gymnasiums, which correspond to our high schools.

In the following 10 years a great many school examinations were reported. Most of the schools examined were in Germany. In the main the examiners agreed, namely, that nearsight steadily increased from the lowest to the highest classes. In fact, in some classes in German universities as high as 75 per cent of the students were found nearsighted.

In 1875 the first examination of school children's eyes was made in the United States. At that time there were schools for negro children in New York city, and it then appeared to me that the opportunity should be utilized. The selection of negroes was not made without good reason. Nearly all the previous examinations were made in Germany, and of course on white children. The percentage of defective vision is greater in Germany than in any other country.

: Germans acquire myopia or nearsight by long years of ', having perhaps inherited a predisposition to it, or inher- it already developed, and increased it during the growing ı.

r colored brethren as a rule never did enjoy a thorough 'm of education. The present generation in New York may ıid to enjoy as thorough a system as the city affords, but · forefathers did not; neither were they engaged in such uits as taxed their eyes, therefore the negro students ought ırnish the nearest approach to a natural eye, i. e., a normal

ıe total number of colored children examined fell a little t of 500; and the results justified the selection—that is a small percentage of the total number was found to be sighted. Almost 3 per cent of the whole showed myopia, e over 80 per cent were hyperophic or farsighted.

ıis examination extended over a period of nearly three ths, and during that time I kept my eyes under a 4 per cent tion of atropine. It would have been impossible to have ed the children as Cohn did in many cases by putting atro- s in their eyes, so I did the next best thing and put them in own, thereby securing accurate results.

the following 10 years very many examinations of school lren's eyes were made in this country, with the result that schools have been benefited thereby. Suitable buildings and iture, good lighting, improved heating and ventilation have lted.

Europe the same advances have been made in this regard ith us. The different continental governments found that as necessary to look after the school children's eyes if they ed to keep up their vast standing armies to their full effi- cy. Every able-bodied male must serve a given time with colors, and nearsighted soldiers are not the best material to ler effective service, especially as high degrees of nearsight mpt many that otherwise might be called on to serve. It

became a question of vital importance, and to-day their schools are carefully looked after.

In our large cities the same holds true to a certain extent, but not by any means to the same degree as abroad.

It is true that we have no large standing army, and our young men may never be called upon to bear arms in defence of our country, but at the same time if the eyes of the young can be safeguarded, it is our manifest duty to do so.

Good vision is demanded of all the employees of railroads, fire and police departments and candidates for West Point and Annapolis. Any examining surgeon who has to pass on the fitness of young men applying for the various positions above-mentioned cannot fail to notice and reject a great many on account of defective sight, as shown by the usual test.

Dr. Daniel Lewis, the present health commissioner of New York state, requested me to get up a simple scheme for the testing of school children's eyes. The following schedule was prepared two years ago for the teachers to test their classes:

SCHEDULE.

Blank—Form A

Public School No. .

Vision.

| No. | Name | Age | R. E.—L. E. | Remarks |
|---|---|---|---|---|

Blank—Form B

Public School No. .

Mr. _____

_____

_____

*Principal.*

Dr. Lewis—I had hoped that Superintendent Skinner might be present to discuss this paper. I do not see him here but would state for your information that we have conferred with the Department of Public Instruction, which has appreciated the value of these tests, and has assured me that next year

e matter will be placed in the Educational manual, which is stributed to teachers throughout the state.

It is a matter of considerable importance and a matter that roperly comes before the attention of the health officer, alough your offices in the matter may be simply those of advisig the teachers in the localities in which you are located.

Are there any remarks—any discussion of the paper?

These blanks, together with the test type, may be had from his Department upon application. I would like to have this pplication, however, come to the health officer, as I have everal times said to-day, whom we regard as our special repreentative in his locality. If your school board wishes it done, he proper course would be to send through you for such inormation, blanks, etc., as they require.

Dr. Lewis—One of the most important subjects which boards of health are called upon to deal with is that of sewage disposal for cities and villages.

Professor Landreth, who is the consulting engineer of this Department, has consented to open a discussion upon this subject.

## SEWAGE DISPOSAL FOR CITIES AND VILLAGES

By Prof. Olin H. Landreth, Professor of Engineering, Union College

It is doubtful if there is at present any question claiming more urgent attention from municipal authorities, and especially from public health officers, than that of the proper and feasible means of sewage disposal for cities and towns. We have long since passed the period of discussion as to the necessity for systems of public water supply, and the great majority of even our moderately small villages have done something in the direction of sewerage, but the public is now just awakening to the fact that a system of sewerage is not complete until the sewage is not only properly collected, but is suitably disposed of in a manner to meet the conflicting requirements of public saniation and municipal economy. Unlike the cases of water supply and sewers, the subject of sewage disposal is forcibly

brought to our attention not for motives generally of improvir the sanitary condition of our own municipalities, but rather ( avoiding injury to others. In fact, the matter of sewage di posal has thus suddenly come to such prominence mainl through the rather recent recognition of the old common-la principle of the property rights in running waters. So long a communities accepted as inevitable the polluted condition c streams flowing through their midst, the term "sewage di posal" was unknown, but since our courts and legislature ar so generally coming to recognize that a riparian owner is full and clearly entitled, not only to the land forming the bank o the stream, but also to the right to have the water of the strea flow "as it was wont to flow" in its natural state, unimpaire either in quantity or in quality—since this, I say, we have sud denly awakened to the fact that our usual custom of discharg ing sewage into the nearest or most convenient stream is likel to be an infringement of the well-established rights of ou downstream neighbors, and that these neighbors of ours ar remarkably prompt to realize the same fact and also to dis cover that there is a way to turn this infringement to thei financial gain by means of judicial indemnities. Our sobe minded neighbors, however, are more apt to prize the purity o the stream rather than its pollution, and to secure the restora tion of the original purity, as they are usually able to do, b judicial injunction directed against the pollution. These fact are now too well established to warrant the time necessary t recite the steps on which they are founded, but if any perso desires more detailed information bearing on this general sul ject of the absence of a right to pollute a stream or body c water by sewage or manufacturing waste, let him examine th forthcoming annual report of the Buffalo meeting of the Amer can public health association, wherein he will find, in the repo of the standing committee on the pollution of public water su plies, much valuable information, particularly a summary of th laws of the several states on the matter of stream pollutio and what is even more pertinent in the present connection, a li

of the more recent court decisions on the right, or more properly, the absence of a right, to pollute streams by sewage or manufacturing refuse. These decisions show a remarkable unanimity in recognizing the principle that the character or quality of the water of a stream is properly one of the legitimate elements of value of the stream to its riparian owners, and as a consequence the impairment of that element of value by any substantial pollution, whether from sewage or other sources, is actionable, and if established will result in indemnity or injunction or both. In the United States sewage systems are all but universally on the water-carriage plan in which water is the vehicle or medium employed to transport away the organic refuse. The only exception to this system of water-carriage occurs in those rare cases where isolation from a water supply or real or supposed difficulty of ultimate disposal leads to the adoption of either the dry-earth closet system or some form of incineration. While the dry-earth system is vastly superior to the old form of privy vault, or the closet connected with a cesspool, and therefore may advantageously be used in many smaller communities and isolated situations, it will not be considered further here, and attention will be confined to the water-carriage system for the collection of the sewage. A water-carriage system of sewers must provide for substantially the whole of the domestic water consumption, since but little water is actually consumed beyond that used for sprinkling lawns and gardens, and this is more than made up by the unavoidable infiltration of ground-water into the sewers through defective joints. The volume of this total water supply will evidently depend on the lavishness with which water is used by the community and on the proportion of waste incurred in the system of water pipes and fittings, and will vary from 40 gallons per capita per day in well-metered American towns to 300 or even 400 gallons per capita per day where the system of water mains and fittings is defective, and where no check is placed on the extravagant use and waste of water. The amount of polluting material will depend, however, not at all on the lavishness in the use or waste of water, but on

the amount of organic material borne away by the waste water—in towns whose water consumption is somewhat less than 100 gallons per capita per day.

Mr. Hiram F. Mills, a well-known sanitary engineer and a member of the Massachusetts state board of health, has stated that 1000 pounds of such sewage would contain 998 pounds of water, one pound of mineral matter and one pound of organic matter, and that the two pounds of foreign matter are about equally divided between matter in suspension and matter in solution. Since the mineral matter is usually unobjectionable in the amount here stated, it may be said that the organic matter of ordinary American sewage comprises only one-tenth of one per cent of the total sewage, and that the whole problem of sewage disposal is concerned with the question of either removing this one-tenth of one per cent, or of reducing it from its organic condition to its ultimate chemical elements, or at least to inorganic form. How shall this removal or this transformation be best accomplished? Before attempting to answer this final question let us consider two points: (1) the objectionable features of sewage; (2) changes which sewage passes through when left to natural causes. These will be treated together. The organic one-half of the total solid matter of sewage originates in the dead animal and vegetable matter of domestic waste; it is largely nitrogenous in composition and hence quite unstable and subject to rapid decomposition. This decomposition is in itself objectionable in the water, but the attendant conditions are much worse and constitute the really dangerous element in sewage pollution. These conditions arise from the fact that the dead organic matter of the sewage furnishes sustenance for a great variety of species of micro-organisms and bacteria which propagate and flourish in amazing numbers under favorable conditions of temperature and aeration.

Some of these species are actually pathogenic, while others, non-pathogenic, produce unsanitary and objectionable conditions by their rank growth, decay in the water. But much the worst element of sewage pollution of waters comes from the

opportunity which it offers for the rapid and widespread dissemination of the water-borne zymotic diseases, of which typhoid fever is a typical example.

Under natural conditions dead organic matter will be broken down and decomposed by certain of these species of micro-organisms and bacteria if in water, and by other species having similar functions if in the air or in the soil; in any case the ultimate result will be that the organic matter has been reduced, partly to its ultimate chemical elements, but mainly to stable inorganic compounds, among which the nitrates and nitrites of lime, potash and soda predominate. Since these compounds form favorable plant-foods, they are taken up by vegetation, whether on land or in water, and thus begin again the ever recurring cycle of life, the dead organic remains of one generation becoming food for the next through the agency of the oxidizing and nitrifying bacteria. Now unless we can find some better purpose to be attained in the disposal of sewage than its reduction to plant-food or at least its reduction to harmless nitrates and nitrites, it would appear rational in seeking for methods of disposal to adopt such as follow the methods of nature, for two reasons:

1 Because thereby we work with nature rather than against her, and thus secure her assistance rather than her opposition.

2 Because by so doing we contribute something toward the economy of nature in returning otherwise waste material to a form available for plant-food. With the foregoing ideas in mind let us consider some of the various processes advocated for sewage disposal and consider their respective suitability. The processes which are receiving serious consideration and have been employed may be grouped under the following heads:

1 Dilution by discharge into streams or bodies of water.

2 Chemical precipitation.

3 Chemical disinfection.

4 Irrigation of land on which crops are grown.

5 Intermittent sand filtration.

6 Treatment in contact beds.

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2 Chemical precipitation.

3 Chemical disinfection.

4 Irrigation of land on which crops are grown.

5 Intermittent sand filtration.

6 Treatment in contact beds.

7 Treatment in septic tanks.

8 Combinations of two or more of the above methods.

The writer was once asked by a prominent health official, What method of sewage disposal do you advocate? The questioner being a physician, the answer given was another question: What medicine do you use in treating disease? It is not to be inferred that there are as many different methods of sewage disposal as there are medicinal remedies, but it is to be clearly understood that each case requires its own specific treatment, since different surrounding conditions make different treatment essential. Let us consider the distinctive features of the several methods above mentioned and the conditions favorable to each:

### DILUTION BY DISCHARGE INTO STREAMS OR BODIES OF WATER

The capacity of a stream to receive sewage without becoming noxious depends upon the degree of dilution, on the condition of the water as to absorbed oxygen, on the temperature of the water, and on the nature of its flow over its bed, whether rippling in a shallow stream or flowing in deep quiet volume. The organic matter is not all deposited on the bed; in fact, unless some chemicals of precipitating nature are mingled with the sewage the amount deposited is usually small. Neither does the organic matter remain unchanged in the water. The bacterial reduction goes on slowly and the stream slowly but gradually tends to purify itself, though the time required for complete purification is so great that few if any of our rivers are long enough to permit of accomplishing this. It may be stated in general that if a stream is used for potable purposes, it is inadmissible to discharge sewage into it unless the distance and the degree of dilution are both very great. For streams that are not used for potable purposes a dilution of 100 times the volume of the sewage will usually result in no serious pollution, while a dilution of 50 times the volume of the sewage is apt to produce sensible pollution, and a dilution of only 25 times the sewage is quite certain to do so.

### CHEMICAL PRECIPITATION

By this process it is endeavored to separate the solid matter of the sewage by precipitating it with alum, sulphate of iron or some other cheap form of precipitant; the liquid matter is then run off and the solids, called sewage sludge, are either drained or pressed, and are finally disposed of by either burning in a suitably arranged furnace or used as a fertilizer on land. The action of the chemical used for precipitants will almost always be that of a disinfectant so long as they remain in the sewage, hence they interfere with the bacterial reduction of the organic matter. Moreover, the part of the organic matter existing in solution is not materially reduced, so that the purification is only partial and rarely exceeds 60 per cent of the organic matter. In general the process is costly, incomplete, inefficient, and in the light of modern information on bacterial agencies has little or nothing to commend it. It is in fact an absolute process, except under very peculiar circumstances where none of the other methods are available.

### CHEMICAL DISINFECTION

This process is based on the mistaken idea of preventing the action of bacteria on the sewage rather than encouraging it. Various chemicals are employed, frequently chlorine in some form, but in any case the disinfection is only temporary and bacterial action is restored as soon as the disinfectant is dissolved out or diluted to the point of losing its effect. The process is an effort in the wrong direction and has nothing in its favor.

### IRRIGATION ON CULTIVATED LAND

This process utilizes the sewage to irrigate cultivated land. While the process conforms to the natural process of bacterial reduction and utilizes the plant-food contained in the sewage, there are serious obstacles attending its use. Principally among these is the very heavy investment in land necessitated by the very low average rate of discharge of the sewage on the land. This rate varies from 5000 to 12,000 gallons per acre per day

and requires about 10 acres for each 1000 of population. The method finds its best field in arid countries, where the land requires artificial irrigation. The process also finds a useful place where the sewage may be discharged into the streams during the winter and wet seasons and applied to the land during the dry months. During these months the rate of discharge may be considerably increased over the above figures. The total cost of preparing irrigation fields varies widely but will generally be between $100 and $400 per acre.

### INTERMITTENT SAND FILTRATION

In this system filtration beds are prepared which are composed of sand, from three to five feet in depth, with suitably arranged underdrains for removing the filtrate or effluent. The sewage is applied intermittently for several hours and then the bed is allowed to drain and to remain empty a period usually twice the length of time it has been receiving sewage. This interruption to the operation of filtration is necessary in order that the bacteria of reduction may be furnished with a new supply of oxygen, as the species of bacteria which effect the complete reduction of the organic matter of the sewage to nitrates are aerobic in character and require oxygen for their maintenance. The subsidence of the top plane of the sewage downward at the end of the period of operation draws down air and thus furnishes this supply of oxygen intermittently. The capacity of these beds where crude sewage is treated is very low, as the solids in suspension obstruct the upper surface. Twenty thousand gallons per acre per day in winter and 50,000 gallons per acre per day in summer are fair average rates of filtration. These include the time for aeration. The first cost of preparation of intermittent filtration areas will usually be from $1000 to $2000 per acre of total area where the filtering material is found in place and simply requires grading, underdraining, embanking and piping; while if the filtering materials have to be brought from other points and deposited as well, the cost is raised to $4000 to $6000 per acre.

These filters, apart from an occasional raking of the surface and sometimes replacing of the thin top layer, require no other replacing and can be used continuously. They are apt to store up some organic matter in winter due to imperfect nitrification but dispose of it during the following summer if not overloaded.

The low capacity of these filters per acre constitute their only objection; this low capacity is due to two facts: (1) that the beds must lie idle for aeration during more than half the time; (2) that the solids of sewage interfere with the surface action. Various devices have been devised to overcome these limitations. Simultaneous filtration and aeration is accomplished in both the Ducat and the Waring filters with increased capacity but at considerably increased costs. The difficulty of treating solid sewage has been attacked energetically and with considerable success by putting the sewage through a septic tank before final filtration. This tank will be described later.

## TREATMENT IN CONTACT BEDS

These contact beds are simply deep tanks or reservoirs containing some coarse material such as coke, cinder, burnt clay, or broken rock. The sewage is run into the bed with the outlet closed and allowed to stand in contact with the coarse material for two hours usually; it is then drawn off and run into another similar bed with finer material. The first bed is then allowed to stand idle and become aerated during about four hours, when it is again filled. The entire surface of the broken stone or coarse material becomes a fixed habitation for the bacteria which operate on the sewage standing in the interstices of the filter. Since the voids are much larger in dimension than in the sand filters the solid matter is not retained on the upper surface, but may be distributed throughout the mass and thus be more rapidly acted on by the bacteria which break up solid matter into liquid. The capacity of these beds is therefore much greater than for the sand filters, and on this account the intermittent sand filter has come to be called "slow sand filter."

Since these sand filters are able to operate at much increased rates on purely liquid contact bed it is frequently recommended as a preliminary to sand filtration.

### TREATMENT IN SEPTIC TANKS

A septic tank is simply a plain water-tight sewage reservoir, closed from air and light or not, according to circumstances, into which the raw sewage is led and allowed to stand or rather to move very slowly through the tank, passing out at the farther end. The bacterial action here is rather different from that in the case of irrigation, slow sand filtration, of contact beds. The beds offering no opportunities for aeration of the sewage, the aerobic species of bacteria perish for want of oxygen. Other species called anaerobic, which thrive in the absence of oxygen, now develop and operate on the sewage. The first function of these bacteria is that of putrefaction, in which solid matter is broken down to the liquid form and some gas is liberated. For the later end of the action in the septic tank, i. e., at the last end of the tank, the sewage has become reduced to three different classes of material: Floating on the top is a thick coating or scum composed of a porous mass of those portions of the solid matters which have as yet resisted the action of the liquifying bacteria; beneath this and occupying the intermediate portion of the depth of the tank is clarified sewage, holding still a large part of the organic matter, but now in solution instead of in suspension. On the bottom of the tank will be found the mineral residue of the solid matters, together with some matter resembling humus. The outlet of the tank is arranged to draw from the middle plane of clarified sewage, and this material is then taken to other filters for final purification. This system is the latest of all sewage methods and there is much yet to be learned regarding it, but the latest results available from the Manchester, England, experiments indicate that by use of separate tanks as a preliminary to the contact beds, crude sewage can be successfully purified at nearly ten times the rate possible for slow intermittent sand filtration.

One of the matters pertaining to septic tanks of which the resent knowledge is very meagre is the relation between the me of detention of the sewage in the tank and the character f the effluent; certain toxins or enzymes appear to be formed y the anaerobic bacteria which tend to disturb the subsequent erobic action on the effluent after it has passed to the following lters or contact beds. The occurrence of these appears to deend on the time of detention of the sewage in the tank and lso on the temperature.

Septic tanks remove only about 30 per cent of the organic natter of the sewage; their chief value lies in their power to iquify solid matter in the sewage and thus prepare the effluent rom the tank to be subsequently purified at greatly increased ates of treatment. In this capacity the septic tank has already practically revoluntionized former practice as to rates of purification.

### COMBINATIONS OF TWO OR MORE OF THE ABOVE METHODS

Circumstances in different localities differ widely as to character of the sewage; degree of purification demanded; character of filtering materials available; area available, and variation in amount and character of the sewage to be treated. To suit these varying conditions severely taxes the elasticity of any one of the above processes, but presents no special difficulty for a combination of two or more of the above systems.

The most rational combination is one comprising the septic tank as the preliminary step to liquify the solid matters, followed by one or two contact beds in series to remove the bulk of the organic matter, and these followed by sand filtration if the requirements for final purification are very high. With such a combination, with provisions for dropping off temporarily any one of the three steps, a perfectly elastic system results, which may be worked either to give a small and inconsiderable egree of purification at a very high rate, or at the other extreme may give purification of the drinking-water standard.

Examples of such combination may be mentioned in the plants now undergoing preliminary steps at Marshalltown, Iowa, Saratoga Springs, N. Y., Kingston, N. Y., and several other smaller places.

## DISCUSSION OF PROF. O. H. LANDRETH'S PAPER ON SEWAGE DISPOSAL

BY J. JAMES R. CROES, PRESIDENT AMERICAN SOCIETY OF CIVIL ENGINEERS

The interesting paper of Professor Landreth gives only a faint idea of the magnitude and multifariousness of the subject which we are here to discuss and which the health officer, the civil engineer, the chemist and the financier are called upon to handle in cooperation.

The disposal of sewage is the last step in a long and complicated series of processes which must be carried on systematically and intelligently if the public health is to be maintained in a satisfactory condition. The suppression of nuisances, the preservation of the purity of the sources whence the food supply is drawn, the maintenance of a certain standard of physical purity in the individual, the family and the dwelling, precede and render necessary the removal and destruction of the waste surplus of matter which has been utilized, has imparted to the physical organism everything which will conduce to its growth and maintenance and which has become not only useless but deleterious.

The principal agent in the utilization of all solid matters, from their first transformation from their original form to their final dissipation, is water, and so the hydraulic engineer, whose business it is to direct the application of water in all forms and under all conditions to the uses of man, is an important factor in sanitary operations of all kinds. His field of work embraces the collection of water, its preparation for the several uses to which it is to be applied, its purification for use in the human body, its pollution, from a sanitary point of view, for purposes not connected with the human organism, its utilization as a

mechanical agent, and last but not least, its restoration to a condition in which it is innocuous and capable of being used over again for any purpose.

To bring about these various transformations the engineer must call to his aid all the forces of nature. The light, the winds that blow, the extremes of heat and cold, the resources of those mysterious agencies which we term chemical, and the action of those minute, invisible, impalpable living organisms which are imperceptible to all the unassisted senses must be pressed into the service of the engineer. The intelligent application of all these forces to the several ends they can accomplish is not a matter of guesswork. It is not a matter of speculation and theorizing only. It is the outcome of reasoning from experience and of experience directed by reasoning. The relative cost of various methods of attaining the desired result is of course a very important element in determining which is the most suitable in any case. This can only be determined by experience. All of the most recent methods of disposal of sewage which have been so well described and summarized by Professor Landreth are as yet untested for a sufficient length of time to determine with certainty their relative cost in the long run. Some of the most recent promise wonderfully well at the outset, but they have not been tested long enough in actual practice to warrant the assertion that they are unquestionably destined to be the most economical and effective in a long series of years. It is not at all impossible that a new and untried plant may prove to be short-lived and that the cost of renewals, low though that may be, will overbalance the reduced first cost of construction and maintenance. It is still too early to speak of any method which has proved reasonably successful in the past as obsolete.

There is a very important point in connection with the sanitary condition of towns and villages to which I wish to call your attention. It is the necessity for the contemporaneous perfecting of works for furnishing an increased supply of water and the works for the removal of so much of that water as is

not absorbed or evaporated during its use. It has become polluted and defiled and unfit for use. To prevent its doing further injury to health it must be removed from proximity to dwellings, and it should be transformed by the removal of its deleterious compounds.

Wherever a supply of good and wholesome water is provided, the sewage or waste water must be taken care of at the same time. The necessity for a rigid enforcement of this rule increases every year and every day.

Twenty-one years ago, when I began the collection of the statistics of American water-works for the Engineering news, a work which has since been expanded into the valuable and comprehensive Manual of water-works, there were less than fifty towns and villages in New York state which had a public water supply, and not half of these possessed any means of disposing of the waste water. To-day there are over 500 public water supplies in the state, but it is believed that only a small proportion of the towns and villages supplied have any system of sewers. Where there is no sewerage system the public health is endangered, and it is the duty of all health officers to see that this evil is rectified as quickly as possible. They must be purified as well to prevent their doing further injury to other communities.

In this connection, it is worth considering that an excessive and useless consumption of water imposes a double burden on the taxpayers who have to defray the cost of not only furnishing the water in the first place, but also of disposing of the unused surplus. It is very well to say that "water should be free as air," but the doctrine is carried too far when a comparatively small proportion of the users of water are permitted to waste great quantities of it, which involves the expenditure of a very considerable sum for its final purification and disposal.

The majority of consumers do not, I am satisfied, waste water extravagantly, but there are always some who do waste it, and that not always wilfully or knowingly. I had occasion last year to look into this matter to some extent while engaged on

an investigation of the amount and causes of the waste of water in New York city for the Merchants' association.

In a number of houses, from those of moderate size occupied by those of moderate means, to large buildings I put on meters. There were 25 houses in which I put on meters, and in 18 of them the average use was 350 gallons a day. That was about 50 gallons per head, after I had applied some rules of common sense to it and had some examinations made. At first the average use was a great deal larger, but I found that three-fourths of the houses were using 350 gallons per day, or about 50 gallons per head.

There was one house where they were using 1200 gallons, and the gentleman who owned that house was very sure that his plumbing was all right and that everything was in perfect order, but he was using so much more than his neighbors that I insisted on examining his plumbing, and found in the servants' water-closet in the basement that the ball cock was out of order, and there was a steady stream of water running all the time. We shut that off and had it repaired, and he came down to 350 gallons per day.

There was another house where a gentleman was using 2200 gallons a day, and he was sure that he was economical in the use of water, but after we had a plumber there and found one or two little matters that had escaped his attention, we found that there were 1800 gallons a day that ran to waste from that house, and he was using 400 gallons. That water became sewage and had to be disposed of, or would have had to anywhere but in New York, where the sewage takes care of itself, as Mr. Landreth has told you; it goes into the river and nobody pays any more attention to it, but if it had been in an inland town the town would have had to pay for taking care of 1800 gallons of sewage, which would have been a dead loss to everybody.

There was another house where a gentleman had been using 350 to 400 gallons a day, and suddenly one week we noticed that he was using 1200 gallons a day. On inquiry I found that he had a little grandson from the country that had been visiting

him, and he had a toy steamboat that he had been sailing in the bathtub, and he used that 800 gallons a day with his toy steamboat. When he went away the consumption dropped down to the normal standard again.

In four houses which had been using 8921 gallons per day the consumption was reduced to 2207 gallons per day and nobody perceived the difference.

Now, if that 6714 gallons a day which ran away into the sewers had had to be passed through purifying works, the cost of purification, which must be shared by all the 25 houses, would have increased about 75 per cent for each householder over what it would have been if those four houses had not wasted water unnecessarily.

Those things show that the useless consumption of water is an important factor in the disposal of sewage where the sewage has to be disposed of by artificial means, as it will be in nine cases out of ten before many years have passed, because we cannot discharge the sewage into the streams and cannot let the sewage go into the ground or into cesspools without endangering the health of the community.

It seems, therefore, to be essential to the public welfare, from both the financial and the sanitary point of view, that water waste should be prevented and sewage disposal carefully looked after; and all I want to urge upon you is that, in every place where there is a water supply, or where a water supply is anticipated, the construction of the works for carrying away the sewage, and for the disposal of the sewage, should be initiated and carried on at the same time with the water supply. It is six o'clock, and I won't detain you any longer.

Dr Lewis—I am sure we are under very great obligations to these gentlemen for the discussion of an exceedingly important subject—one of the most, if not the most, important subjects connected with sanitation.

Are there any gentlemen present who wish to discuss this paper? You know dinner doesn't come until eight o'clock tonight. If there is to be no discussion—and I can understand

why you do not wish to discuss this paper—it is because you don't know how to discuss it. That is the way I feel about this question of sewage disposal. I have spent considerable time in studying this question. I went with a number of others to England a few years ago with the express purpose of studying their plans and methods, and found that the same uncertainty exists there as here as to what is the best and most feasible method of disposing of sewage in different localities and places. It varies with the location, soil, etc., and with the quantity of sewage.

Take a city like Leeds, which has a large element of metal sewage, discharges from furnaces and iron and brass manufactories—they have a difficult problem, much more difficult than others, to solve, and they spent $100,000 in experiments trying to determine what was the best plan for Leeds. The same is true of other places in England.

The only way we can arrive at the truth in the matter is by just such discussions as this. I think Professor Landreth's paper of to-day is exceedingly clear and easily understood. You can discuss the question understandingly and intelligently on the basis of that paper with your town boards and your sewage commission, when appointed, but the time for investigation of the best methods has not closed. It may possibly have just begun. I am not going to weary you with a discourse upon that subject.

I do want to say one word (this is the last formal gathering we will have perhaps). I wanted to say in connection with the vote of confidence which you gave the commissioner a little while ago that the success of this conference, which I think is very marked, has been as much due to the other gentlemen connected with the Department as to the commissioner. You owe a great deal to Dr Johnson, the secretary of the Department, who has been traveling through the state on official business, and has talked with a great many health officers and registrars. And a great deal of credit is also due to Mr. Stuart, the chief clerk, who has superintended all the local arrangements, and to

Dr. Curtis, and to all the others. We have had the most perfect cooperation and assistance from all parties connected with the Department, as well as those who have favored us with their presence and interest in the matter.

I wish to thank you for your interest and attendance.

The Conference adjourned *sine die.*

## LIST OF PERSONS IN ATTENDANCE AT CONFERENCE

### HEALTH OFFICERS

Abrams, H. C.....Town of Colonie
Allen, D. S.....Town of Seneca
Archibold, John.....City of Cohoes
Auchter, W. D.....Town of Greece
Ball, H. J.....Town of Scott
Bates, M. L.....Town of Caanan
Bayard, A. H.....Village of Cornwall
Belknap, M. C.....Village of Mayville
Biggs, Hermann M.....City of New York
Bodenbender, E. G.....Village of Sloan
Bronk, E. F.....City of Amsterdam
Brown, A. H.....City of Auburn
Brown, Elias A.....City of Troy
Bullard, T. E.....Village of Schuylerville
Burdick, Geo. E.....Town of Andover
Cauthers, James A.....Village of Monticello
Chittenden, D. J.....Village and Town of Addison
Church, Thos. C.....Town of Pittstown
Cleland, T. J.....Town of New Lebanon
Clute, Wm. T.....City of Schenectady
Conley, L. P.....Village of Clifton Springs
Craig, Jos. D.....City of Albany
Curtis, N. H.....Village of Manlius
Cusack, E. J.....Village of Fulton
Deitz, Wallace E.....Town of Knox and Town of Berne
Dimmick, W. F.....Town of Hillsdale

ouglas, F. J.....City of Utica
aton, J. R.....Town of Sullivan
illithorp, R. L.....City of Johnstown
anning, N.....Village and Town of Catskill
arnsworth, F. S.....Town of Plattsburg
off, G. S.....City of Corning
oler, Geo. W.....City of Rochester
oodfellow, E. H.....City of Gloversville
riswold, W. C.....Town and Village of Nassau
anmer, J. L.....City of Middletown
anratta, Edgar J.....City of Watervliet
aviland, N. H.....Town of Volney
eenan, R. A.....Village of Sandy Hill
elwig, F. A.....Village of Akron
ill, F. E.....Village of Bainbridge
itchcock, E., jr.....City of Ithaca
ix, I. A.....City of Binghamton
olmes, Edward A.....Town of Colchester
ang, Chas. L.....Village of Meridian and Town of Cato
othridge, W. E.....Town of Niskayuna
cCarthy, Chas. D.....City of Geneva
cClellan, E. S.....Village of Saranac Lake
cKenzie, Geo. W.....Village of St. Johnsville
ann, Horace J.....Town of Sweden
ason, Perley H....Town of Cortlandt and Village of Peekskill
asson, Thos.....Town of Cape Vincent
eehan, James H.....City of Niagara Falls
oore, B. S.....City of Syracuse
oriarta, D. C.....Village of Saratoga Springs
ulligan, Bernard E.....City of Yonkers
ichols, C. E.....City of Troy
dell, H. L.....Town of Sharon and Village of Sharon Springs
sterhout, E.....Town of Plattekill
sterhout, E. R.....Town of Ulysses
almer, A. H.....Town of Marlborough
arker, F. D.....Town of Newstead

Parslow, B. G.....Town of Arietta
Pomeroy, G. P. K.....Town of Stuyvesant
Reed, S. W.....Village of Margaretville
Reichard, E. E.....Town of Sand Lake
Rivett, F. A. W.....Village of Green Island
Roberts, A. O.....Village of Bath-on-Hudson
Rood, A. B.....Town of Manlius
St. John, F. W.....Town of Charlton
Santry, A. B.....City of Little Falls
Sharkey, J. C.....City of Rensselaer
Shattuck, Jos. W. M.....Town of Westport
Sherman, F. J.....Village of Ballston Spa and Town of Milton
Smith, H. Eugene.....City of Mount Vernon
Stevenson, Fred.....Town of Indian Lake
Stubbs, Roland H.....Village of Waterford
Sutton, Henry C.....City of Rome
Tarbell, D. H.....Village of Schaghticoke
Terwilliger, K. W.....Town of Guilderland
Thomas, O. A.....City of Syracuse
Tiel, Arthur B.....Village of Matteawan
Todd, W. H.....Town of Greenburg and Village of Irvington
Vebber, Frank M.....Town and Village of Clayton
Veeder, M. A.....Village of Lyons
von Zierolshofen, P. H.....Town of New Bremen
Waller, P. G.....Town of New Baltimore
Walradt, Wm. D.....Town of Schodack
Watkins, A. V.....Town of West Sparta
Weidman, Chas. E.....Town of Wright
Welch, C. D.....Village of Castleton
Wellman, Geo. M.....Town of Dover
Westfall, Helen M.....Town of Summer Hill
Wey, H. D.....City of Elmira
Whitford, H. P.....Town and Village of Bridgewater
Willard, E. S.....City of Watertown
Wilson, John S.....City of Poughkeepsie
Wilson, W. H.....Village of Lestershire

Winsor, F. L.....Town and Village of Laurens
Wood, Matthew.....City of Syracuse
Woodworth, T. Floyd.....Town and Village of Kinderhook
Young, E.....Town of Glenville
Young, P. S.....Town of Springfield
Young, T. A. E.....Town of Rossie

REGISTRARS

Adey, John M.....City of Cohoes
Albertson, Wm. G.....Village of Amityville
Babcock, Nathan.....Town of North Greenbush
Bartram, P. R.....Village of Fredonia
Benley, G. C.....Town of Floyd
Blackman, L. P.....Village of Lestershire
Cornell, H. D.....Town of Hillsdale
Eggers, Luhr.....City of Watervliet
England, John L.....Village of Palatine Bridge
Farnsworth, F. S.....Village of Plattsburg
Fogarty, T. W.....City of Utica
Greene, T. H.....Village of New Paltz
Harris, Louis A.....City of Newburgh
Hemenway, C. T.....Town of New Lebanon
Hitchcock, Wm. F.....City of Rochester
Hufnail, Frank E.....Village of Fort Plain
Johnson, Walter.....Town of Ballston
Kemp, J. H.....Town of Colonie
Link, Walter E.....Town of East Greenbush
Lowry, Henry.....Village of Ballston Spa
McCormick, J. B.....Village of Glens Falls
McNulty, J. D.....Village of Saratoga Springs
Magel, Wm. P.....City of North Tonawanda
Martin, John E.....Town of Sand Lake
Osborn, Jos. S.....Town of East Hampton
Riesing, G. H.....Town of Wilmurt
Rivenburgh, Fred P.....Town of Clermont
Rowe, Frank E.....Town and Village of Bridgewater

Sargent, F. D.....Village of Bath-on-Hudson
Schermerhorn, Geo. C.....Town of Penfield
Scott, W. B.....City of Kingston
Sheldon, A. P.....Town of Lyons
Smith, Jonas S.....Village of St. Johnsville
Teachout, Wm.....Village of Bainbridge
Thompson, A. C. N.....City of Middletown
Tracey, Geo. W.....Village of Kinderhook
Van Wormer, F. J.....Town of Guilderland
Van Zandt, Wm. G.....City of Albany
Vick, Henry H.....Town of Greece
Weeks, H. Luther.....Town of Hempstead

VISITORS

Andrews, Horace.....Albany
Bassler, W. E.....Middleburg
Burnham, Henry W.....Ballston Spa
Callan, Dr Peter A.....Yonkers
Cobb, W. S., M. D.....Corning
Conway Jas. J.....Saratoga Springs
Croes, Prof. J. J. R.....New York
Demus, Wm. A.....Waterford
Dick, Nathan.....Clermont
Eigenbroadt, Chas.....St Johnsville
Engelhardt, Prof F. E.....Syracuse
Engle, J. L.....Middleburg
Hill, Robt. W.....Canandaigua
Johnson, W. E., M. D.....Waverly
Kaiser, John.....North Tonawanda
Landreth, Prof Olin H.....Schenectady
Lewis, Orville.....New York
McKeefe, Edward P.....Albany
Moore, Fred J.....Clermont
Phillips, Wm. J.....Albany
Skelton, W. T.....New York

zer, B. T., M. D.....Albany
r, A. Walter, M. D.....Herkimer
ıpson, John, M. D.....Albany
er, Prof Willis G.....Albany
le, Ernest, M. D.....Buffalo
more, B. T., M. D.....New York
ox, Prof Walter F.....Ithaca
, Franklyn M.....New York

# SANITARY CONDITION OF THE STATE

AND

# SUMMARY OF MORTALITY REPORTED DURING THE YEAR

# Sanitary Condition of the State and Summary of Mortality Reported During the Year

By F. C. Curtis, M. D.

There were 129,257 deaths from all causes reported during the year in the Monthly bulletin; besides which 1,500 death returns were received too late to appear therein, making the total mortality of the state for the year 130,757. With these additions the death rate for the year is 180 per 1000 population, estimating the population of the state at 7,268,000. This represents an average longevity of about 55 years, the same as last year.

The following tables show the deaths, as classified in the Monthly bulletin, for the current year and for the nine years preceding, covering the 10 years 1892-1901, and the mortality of the sanitary districts into which the state is divided.* It is noted that the number of deaths is greater than in either of the preceding years. The increase above the average of the series is in typhoid fever, measles, acute respiratory diseases, diseases of the digestive, urinary and circulatory systems, cancer, violence and unclassified diseases. There is decrease in acute diarrheal diseases, scarlet fever, diphtheria; also in infancy and old age.

* *Maritime district:* Includes New York, Brooklyn, Long Island, Staten Island and Westchester county. *Hudson valley district:* All the counties on either side of the Hudson river, except Westchester, to and including Albany and Rensselaer. *Adirondack and Northern district:* The northern section of the state—the counties of Washington, Warren, Hamilton, Essex, Clinton, Franklin, St. Lawrence, Jefferson and Lewis. *Mohawk valley district:* Schenectady, Schoharie, Saratoga, Montgomery, Fulton, Herkimer and Oneida counties. *Southern tier district:* The seven counties along the southern border of the state. *East central district:* Sullivan, Delaware, Otsego, Madison, Chenango, Onondaga and Cortland counties. *West central district:* Cayuga, Tompkins, Seneca, Schuyler, Ontario, Yates, Livingston, Genesee and Wyoming counties. *Lake Ontario and western district:* Oswego, Wayne, Monroe, Orleans, Niagara and Erie counties.

TOTALS OF MORTALITY, CLASSIFIED BY CAUSES, FOR 10 YEARS 1892–1901, AND AVERAGE YEARLY MORTALITY

| YEARS | Total number of deaths | Representing average daily death rate of— | Deaths under five years | Percentage of deaths under five years to total deaths | Zymotic deaths per 1000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1892 | 126,302 | 345 | 42,434 | 33.5 | 183 | 649 | 1,664 | 613 | 143 | 2,177 | 1,350 | 477 | 921 |
| 1893 | 123,908 | 340 | 41,643 | 33.6 | 180 | 875 | 1,685 | 493 | 252 | 1,626 | 789 | 366 | 1,203 |
| 1894 | 118,195 | 324 | 41,472 | 35.0 | 185 | 489 | 1,640 | 422 | 308 | 1,227 | 900 | 331 | 1,020 |
| 1895 | 121,735 | 336 | 42,003 | 34.5 | 165 | 546 | 1,716 | 409 | 11 | 850 | 1,266 | 370 | 1,169 |
| 1896 | 120,683 | 330 | 40,136 | 34.5 | 156 | 510 | 1,542 | 449 | 3 | 759 | 1,495 | 340 | 996 |
| 1897 | 117,078 | 321 | 35,771 | 32.6 | 140 | 538 | 1,351 | 380 | 27 | 841 | 873 | 303 | 825 |
| 1898 | 120,972 | 331 | 37,113 | 30.2 | 136 | 695 | 1,810 | 404 | 1 | 837 | 838 | 237 | 1,155 |
| 1899 | 121,821 | 333 | 35,386 | 29.0 | 120 | 702 | 1,604 | 248 | 21 | 730 | 756 | 353 | 886 |
| 1900 | 128,468 | 352 | 39,204 | 30.5 | 137 | 531 | 1,948 | 309 | 14 | 689 | 1,333 | 466 | 1,020 |
| 1901 | 129,257 | 354 | 35,755 | 28.0 | 145 | 492 | 1,741 | 283 | 445 | 1,430 | 859 | 363 | 721 |
| Average for 10 years | 122,842 | 337 | 39,092 | 32.0 | 155 | 603 | 1,670 | 401 | 122 | 1,116 | 1,046 | 360 | 992 |

## TOTALS OF MORTALITY, CLASSIFIED BY CAUSES, ETC.—(*Concluded*)

| YEARS | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1892 | 5,918 | 9,185 | 20,432 | 13,471 | 1,131 | 8,920 | 6,502 | 9,013 | 14,009 | 3,152 | 5,543 | 6,385 | 14,647 |
| 1893 | 5,947 | 9,056 | 19,807 | 13,123 | 1,054 | 8,834 | 6,955 | 9,042 | 13,826 | 3,232 | 5,295 | 5,826 | 14,622 |
| 1894 | 6,592 | 8,956 | 15,885 | 12,824 | 911 | 8,715 | 6,947 | 8,451 | 12,948 | 3,305 | 5,487 | 5,497 | 15,310 |
| 1895 | 4,989 | 9,055 | 17,725 | 13,267 | 939 | 7,892 | 7,449 | 9,966 | 11,724 | 3,534 | 5,889 | 5,569 | 16,380 |
| 1896 | 4,597 | 8,776 | 16,820 | 13,265 | 972 | 8,955 | 7,770 | 10,486 | 11,925 | 3,789 | 7,022 | 5,377 | 14,385 |
| 1897 | 4,115 | 7,267 | 16,277 | 12,641 | 1,013 | 8,963 | 7,866 | 10,905 | 12,124 | 4,131 | 6,172 | 5,516 | 14,950 |
| 1898 | 2,612 | 8,499 | 16,350 | 12,979 | 920 | 10,101 | 8,641 | 10,511 | 14,312 | 4,385 | 6,520 | 5,524 | 14,641 |
| 1899 | 2,786 | 6,480 | 17,938 | 13,412 | 877 | 10,163 | 9,064 | 10,606 | 13,177 | 4,533 | 6,093 | 6,098 | 15,324 |
| 1900 | 3,306 | 7,959 | 19,232 | 13,590 | 1,136 | 10,644 | 9,509 | 10,676 | 12,993 | 4,871 | 6,714 | 5,402 | 16,134 |
| 1901 | 3,026 | 9,337 | 17,589 | 13,766 | 1,068 | 7,478 | 9,558 | 11,949 | 13,366 | 5,033 | 7,926 | 5,439 | 17,388 |
| Average for 10 years | 4,389 | 7,437 | 17,805 | 13,234 | 1,002 | 9,056 | 8,026 | 10,140 | 12,940 | 3,996 | 6,266 | 5,664 | 15,378 |

## TOTALS OF MORTALITY IN THE SANITARY DISTRICTS FOR THE YEAR

| DISTRICTS | Total number of deaths | Representing annual death rate per 1000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years or over | Zymotic deaths per 1000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maritime district | 76,030 | 20 0 | 25,649 | 33.5 | 7,812 | 170 | 257 | 775 | 222 | 426 | 1,178 | 469 | 208 | 334 |
| Hudson Valley district | 11,926 | 17.5 | 2,309 | 20.0 | 2,744 | 100 | 43 | 238 | 32 | 6 | 79 | 56 | 25 | 49 |
| Adirondack and Northern district | 5,611 | 14.0 | 1,155 | 20.5 | 1,582 | 115 | 31 | 97 | 3 | 4 | 35 | 83 | 22 | 36 |
| Mohawk Valley district | 6,455 | 16.0 | 1,195 | 18.5 | 1,737 | 105 | 28 | 110 | 4 | 4 | 25 | 49 | 25 | 37 |
| Southern Tier district | 5,982 | 14.0 | 951 | 16.0 | 1,784 | 88 | 21 | 107 | 8 | ..... | 19 | 33 | 19 | 67 |
| East Central district | 5,801 | 14.5 | 894 | 15.5 | 1,821 | 90 | 21 | 104 | 4 | 2 | 27 | 75 | 14 | 29 |
| West Central district | 4,577 | 14.3 | 624 | 13.6 | 1,646 | 63 | 10 | 60 | 6 | ..... | 10 | 29 | 12 | 46 |
| Lake Ontario and Western district | 12,875 | 15.0 | 2,983 | 22.5 | 3,098 | 125 | 81 | 250 | 4 | 3 | 57 | 65 | 38 | 123 |

TOTALS OF MORTALITY IN THE SANITARY DISTRICTS FOR THE YEAR—(*Concluded*)

| DISTRICTS | Croup and diphtheria | Diarrheal diseases (acute) | Acute respiratory diseases | Consumption (pulmonary) | Puerperal diseases | Diseases of digestive system (not acute diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maritime district | 2,147 | 7,114 | 11,010 | 8,730 | 656 | 3,270 | 6,171 | 5,888 | 6,241 | 2,651 | 4,996 | 1,455 | 11,832 |
| Hudson Valley district | 234 | 471 | 1,519 | 1,342 | 87 | 968 | 774 | 1,324 | 1,657 | 459 | 657 | 720 | 1,186 |
| Adirondack and Northern district | 93 | 229 | 703 | 564 | 45 | 441 | 322 | 627 | 706 | 208 | 249 | 483 | 628 |
| Mohawk Valley district | 142 | 264 | 887 | 608 | 48 | 512 | 438 | 677 | 828 | 267 | 340 | 473 | 669 |
| Southern Tier district | 80 | 170 | 716 | 441 | 35 | 499 | 423 | 673 | 838 | 261 | 368 | 550 | 654 |
| East Central district | 64 | 181 | 649 | 563 | 49 | 457 | 360 | 798 | 765 | 295 | 261 | 528 | 555 |
| West Central district | 28 | 128 | 526 | 363 | 32 | 364 | 305 | 625 | 711 | 227 | 235 | 416 | 444 |
| Lake Ontario and Western district | 238 | 780 | 1,579 | 1,155 | 116 | 967 | 765 | 1,337 | 1,618 | 665 | 820 | 814 | 1,400 |

## RELATIVE URBAN AND RURAL DEATH RATE IN THE SANITARY DISTRICTS

| DISTRICTS | Area in square miles | Population per square mile | Percentage city population | Urban death rate* | Rural death rate† | Percentage of Deaths | |
|---|---|---|---|---|---|---|---|
| | | | | | | Under 5 years of age | At 70 years of age and over |
| Maritime | 2,286 | 1,683 | 94.0 | 20.5 | 20.0 | 33.5 | 10.3 |
| Hudson valley | 5,872 | 118 | 44 0 | 19.5 | 15.5 | 20.0 | 23.0 |
| Adirondack and Northern | 15,080 | 26 | 7.5 | 16.0 | 12.0 | 20.5 | 28.0 |
| Mohawk valley | 4,731 | 86 | 37.5 | 18.0 | 14.0 | 18.5 | 27.0 |
| Southern tier | 6,545 | 65 | 34.0 | 16.5 | 12.0 | 16.0 | 30.0 |
| East central | 6,555 | 62 | 30.0 | 14.0 | 14.5 | 15.5 | 31.0 |
| West central | 4,746 | 67 | 16.0 | 14.0 | 14.5 | 13.6 | 36.0 |
| Lake Ontario and Western | 4,378 | 200 | 68.0 | 15.5 | 14.5 | 22.5 | 24.0 |
| Entire state | 50,200 | 145 | 70.0 | 19.2 | 17.0 | 28.0 | 17.2 |

* Namely, in cities of 25,000 population and over. † In towns and places of less than 25,000 population.

## RELATIVE MORTALITY FROM CHIEF CAUSES IN SANITARY DISTRICTS

| DISTRICTS | In Each 1,000 Deaths from All Causes there were from— | | | | | | |
|---|---|---|---|---|---|---|---|
| | Zymotic diseases | Typhoid fever | Scarlet fever | Diphtheria and croup | Diarrheal diseases | Consumption | Acute respiratory diseases |
| Maritime | 170 | 10 | 15 | 28 | 93 | 115 | 145 |
| Hudson valley | 100 | 20 | 7 | 20 | 40 | 113 | 130 |
| Adirondack and Northern | 115 | 17 | 6 | 17 | 41 | 110 | 125 |
| Mohawk valley | 105 | 17 | 4 | 22 | 41 | 93 | 137 |
| Southern tier | 88 | 18 | 3 | 13 | 30 | 75 | 120 |
| East central | 90 | 18 | 5 | 11 | 31 | 96 | 112 |
| West central | 63 | 13 | 2 | 6 | 28 | 80 | 115 |
| Lake Ontario and Western | 125 | 20 | 4 | 18 | 60 | 90 | 125 |
| Entire state | 145 | 13 | 11 | 23 | 72 | 106 | 135 |

## TOTALS OF MORTALITY OF THE STATE, BY MONTHS

| 1901 | Total number of deaths | Representing annual death rate per 1000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years or over | Zymotic deaths per 1000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January | 12,524 | 20.0 | 2,557 | 20.5 | 2,570 | 84 | 38 | 192 | 14 | 10 | 108 | 59 | 33 | 56 |
| February | 11,022 | 19.5 | 2,482 | 22.6 | 2,585 | 86 | 41 | 114 | 11 | 35 | 126 | 74 | 54 | 52 |
| March | 11,913 | 19.2 | 3,070 | 25.8 | 2,167 | 94 | 61 | 111 | 6 | 39 | 200 | 100 | 50 | 57 |
| April | 11,035 | 18.4 | 2,892 | 26.2 | 1,900 | 107 | 59 | 120 | 16 | 42 | 219 | 109 | 62 | 78 |
| May | 10,327 | 16.6 | 2,620 | 25.4 | 1,750 | 112 | 43 | 96 | 15 | 67 | 226 | 95 | 44 | 69 |
| June | 9,500 | 16.0 | 2,500 | 26.3 | 1,476 | 133 | 42 | 83 | 27 | 74 | 165 | 95 | 27 | 54 |
| July | 12,248 | 19.8 | 4,344 | 35.5 | 1,707 | 236 | 51 | 99 | 24 | 89 | 105 | 78 | 17 | 71 |
| August | 10,999 | 17.7 | 4,389 | 40.0 | 1,419 | 285 | 43 | 168 | 36 | 40 | 49 | 40 | 9 | 80 |
| September | 10,269 | 17.2 | 3,668 | 35.7 | 1,490 | 283 | 25 | 210 | 47 | 11 | 32 | 14 | 14 | 60 |
| October | 9,738 | 16.0 | 2,627 | 27.0 | 1,646 | 150 | 25 | 235 | 40 | 14 | 38 | 20 | 17 | 53 |
| November | 9,309 | 15.5 | 2,097 | 22.6 | 1,668 | 110 | 26 | 147 | 23 | 9 | 81 | 49 | 6 | 39 |
| December | 10,373 | 16.7 | 2,579 | 24.8 | 1,855 | 104 | 38 | 166 | 24 | 15 | 81 | 126 | 30 | 52 |
| Totals for the year | 129,257 | 17.8 | 35,775 | 28.0 | 22,333 | 145 | 492 | 1,741 | 283 | 445 | 1,430 | 859 | 363 | 721 |
| Average for 5 years past | 121,665 | 18.0 | 37,340 | 30.7 | ..... | 140 | 596 | 1,655 | 363 | 14 | 774 | 1,085 | 331 | 990 |
| Totals for 1900 | 128,468 | 17.8 | 39,204 | 30.5 | ..... | 137 | 531 | 1,948 | 309 | 14 | 689 | 1,333 | 466 | 1,020 |

TOTALS OF MORTALITY OF THE STATE, BY MONTHS — (*Concluded*)

| 1901 | Croup and diphtheria | Diarrheal diseases (acute) | Acute respiratory diseases | Consumption (pulmonary) | Puerperal diseases | Diseases of digestive system (not acute diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January | 345 | 196 | 2,770 | 1,326 | 98 | 629 | 877 | 1,114 | 1,223 | 440 | 544 | 648 | 1,804 |
| February | 240 | 200 | 2,292 | 1,130 | 114 | 614 | 832 | 1,095 | 1,135 | 371 | 403 | 603 | 1,486 |
| March | 277 | 215 | 2,522 | 1,293 | 122 | 644 | 884 | 1,116 | 1,324 | 409 | 409 | 532 | 1,542 |
| April | 273 | 200 | 1,899 | 1,296 | 101 | 613 | 867 | 1,058 | 1,268 | 423 | 481 | 447 | 1,404 |
| May | 263 | 236 | 1,406 | 1,224 | 92 | 649 | 769 | 1,114 | 1,195 | 434 | 590 | 415 | 1,285 |
| June | 246 | 450 | 965 | 1,111 | 97 | 596 | 751 | 957 | 981 | 418 | 723 | 379 | 1,259 |
| July | 125 | 2,231 | 602 | 1,062 | 78 | 609 | 776 | 821 | 1,175 | 434 | 2,020 | 409 | 1,372 |
| August | 142 | 2,555 | 509 | 1,078 | 81 | 693 | 629 | 831 | 993 | 411 | 683 | 361 | 1,568 |
| September | 183 | 1,808 | 582 | 1,021 | 58 | 673 | 705 | 815 | 958 | 417 | 577 | 402 | 1,657 |
| October | 260 | 733 | 916 | 1,112 | 59 | 659 | 792 | 923 | 991 | 424 | 527 | 425 | 1,475 |
| November | 331 | 300 | 1,203 | 1,063 | 74 | 537 | 841 | 1,002 | 1,000 | 410 | 478 | 364 | 1,326 |
| December | 341 | 213 | 1,923 | 1,050 | 94 | 562 | 835 | 1,103 | 1,123 | 442 | 491 | 454 | 1,210 |
| **Totals for the year** | 3,026 | 9,337 | 17,589 | 13,766 | 1,068 | 7,478 | 9,558 | 11,949 | 13,366 | 5,033 | 7,926 | 5,439 | 17,388 |
| **Average for 5 years past** | 3,524 | 8,010 | 17,259 | 13,144 | 980 | 9,660 | 8,520 | 10,609 | 12,675 | 4,296 | 6,439 | 5,574 | 15,172 |
| **Totals for 1900** | 3,306 | 7,959 | 19,232 | 13,590 | 1,136 | 10,644 | 9,501 | 10,676 | 12,993 | 4,871 | 6,714 | 5,402 | 16,134 |

## TOTALS OF MORTALITY OF THE STATE, BY MONTHS

| 1901 | Total number of deaths | Representing annual death rate per 1000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years or over | Zymotic deaths per 1000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January | 12,524 | 20.0 | 2,557 | 20.5 | 2,570 | 84 | 38 | 192 | 14 | 10 | 108 | 59 | 33 | 56 |
| February | 11,022 | 19.5 | 2,482 | 22.6 | 2,585 | 86 | 41 | 114 | 11 | 35 | 126 | 74 | 54 | 52 |
| March | 11,913 | 19.2 | 3,070 | 25.8 | 2,167 | 94 | 61 | 111 | 6 | 39 | 200 | 100 | 50 | 57 |
| April | 11,035 | 18.4 | 2,892 | 26.2 | 1,900 | 107 | 59 | 120 | 16 | 42 | 219 | 109 | 62 | 78 |
| May | 10,327 | 16.6 | 2,620 | 25.4 | 1,750 | 112 | 43 | 96 | 15 | 67 | 226 | 95 | 44 | 69 |
| June | 9,500 | 16.0 | 2,500 | 26.3 | 1,476 | 133 | 42 | 83 | 27 | 74 | 165 | 95 | 27 | 54 |
| July | 12,248 | 19.8 | 4,344 | 35.5 | 1,707 | 236 | 51 | 99 | 24 | 89 | 105 | 78 | 17 | 71 |
| August | 10,999 | 17.7 | 4,389 | 40.0 | 1,419 | 285 | 43 | 168 | 36 | 40 | 49 | 40 | 9 | 80 |
| September | 10,269 | 17.2 | 3,608 | 35.7 | 1,490 | 283 | 25 | 210 | 47 | 11 | 32 | 14 | 14 | 60 |
| October | 9,748 | 16.0 | 2,627 | 27.0 | 1,646 | 150 | 25 | 235 | 40 | 14 | 38 | 20 | 17 | 53 |
| November | 9,309 | 15.5 | 2,097 | 22.6 | 1,668 | 110 | 26 | 147 | 23 | 9 | 81 | 49 | 6 | 39 |
| December | 10,373 | 16.7 | 2,579 | 24.8 | 1,855 | 104 | 38 | 166 | 24 | 15 | 81 | 126 | 30 | 52 |
| Totals for the year | 129,257 | 17.8 | 35,775 | 28.0 | 22,333 | 145 | 492 | 1,741 | 283 | 445 | 1,430 | 859 | 363 | 721 |
| Average for 5 years past | 121,065 | 18.0 | 37,340 | 30.7 | ..... | 140 | 596 | 1,655 | 363 | 14 | 774 | 1,085 | 331 | 990 |
| Totals for 1900 | 128,408 | 17.8 | 39,204 | 30.5 | ..... | 137 | 531 | 1,948 | 309 | 14 | 689 | 1,333 | 466 | 1,020 |

TOTALS OF MORTALITY OF THE STATE, BY MONTHS — (*Concluded*)

| 1901 | Croup and diphtheria | Diarrheal diseases (acute) | Acute respiratory diseases | Consumption (pulmonary) | Puerperal diseases | Diseases of digestive system (not acute diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January | 345 | 196 | 2,770 | 1,326 | 98 | 629 | 877 | 1,114 | 1,223 | 440 | 544 | 648 | 1,804 |
| February | 240 | 200 | 2,292 | 1,130 | 114 | 614 | 832 | 1,095 | 1,135 | 371 | 403 | 603 | 1,486 |
| March | 277 | 215 | 2,522 | 1,293 | 122 | 644 | 884 | 1,116 | 1,324 | 409 | 409 | 532 | 1,542 |
| April | 273 | 200 | 1,899 | 1,296 | 101 | 613 | 867 | 1,058 | 1,268 | 423 | 481 | 447 | 1,404 |
| May | 263 | 236 | 1,406 | 1,224 | 92 | 649 | 769 | 1,114 | 1,195 | 434 | 590 | 415 | 1,285 |
| June | 246 | 450 | 965 | 1,111 | 97 | 596 | 751 | 957 | 981 | 418 | 723 | 379 | 1,259 |
| July | 125 | 2,231 | 602 | 1,062 | 78 | 609 | 776 | 821 | 1,175 | 434 | 2,020 | 409 | 1,372 |
| August | 142 | 2,535 | 509 | 1,078 | 81 | 693 | 629 | 831 | 993 | 411 | 683 | 361 | 1,568 |
| September | 183 | 1,808 | 582 | 1,021 | 58 | 673 | 705 | 815 | 958 | 417 | 577 | 402 | 1,657 |
| October | 260 | 733 | 916 | 1,112 | 59 | 659 | 792 | 923 | 991 | 424 | 527 | 425 | 1,475 |
| November | 331 | 300 | 1,203 | 1,063 | 74 | 537 | 841 | 1,002 | 1,000 | 410 | 478 | 364 | 1,326 |
| December | 341 | 213 | 1,923 | 1,050 | 94 | 562 | 835 | 1,103 | 1,123 | 442 | 491 | 454 | 1,210 |
| Totals for the year | 3,026 | 9,337 | 17,589 | 13,766 | 1,068 | 7,478 | 9,558 | 11,949 | 13,366 | 5,033 | 7,926 | 5,439 | 17,388 |
| Average for 5 years past | 3,524 | 8,010 | 17,259 | 13,144 | 980 | 9,660 | 8,520 | 10,609 | 12,675 | 4,296 | 6,439 | 5,574 | 15,172 |
| Totals for 1900 | 3,306 | 7,959 | 19,232 | 13,590 | 1,136 | 10,644 | 9,501 | 10,676 | 12,993 | 4,871 | 6,714 | 5,402 | 16,134 |

## MORTALITY OF THE MONTHS

| MONTHS | Total number of deaths | Deaths under five years | Percentage of deaths under five years to total deaths. | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal fever | Typhoid fever | Malaria diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **January:** | | | | | | | | | | | | |
| 1887 | 7,671 | 2,822 | 36.8 | 162 | 61 | 72 | 65 | 21 | 101 | 347 | 30 | 57 |
| 1888 | 8,742 | 2,848 | 32.5 | 176 | 37 | 64 | 71 | 21 | 265 | 55 | 35 | 49 |
| 1889 | 8,337 | 2,963 | 35.2 | 170 | 35 | 89 | 51 | 15 | 242 | 154 | 29 | 105 |
| 1890 | 12,020 | 2,227 | 18.2 | 89 | 29 | 117 | 62 | .... | 93 | 42 | 39 | 114 |
| 1891 | 9,549 | 2,868 | 30.0 | 132 | 47 | 138 | 44 | 1 | 182 | 140 | 30 | 92 |
| 1892 | 12,460 | 3,246 | 24.1 | 107 | 58 | 116 | 38 | 2 | 294 | 80 | 51 | 48 |
| 1893 | 10,490 | 3,056 | 29.1 | 127 | 44 | 120 | 34 | 15 | 237 | 86 | 52 | 94 |
| 1894 | 10,948 | 3,088 | 28.2 | 124 | 53 | 205 | 30 | 34 | 146 | 122 | 35 | 55 |
| 1895 | 10,990 | 3,123 | 28.6 | 100 | 51 | 108 | 30 | 3 | 103 | 34 | 38 | 73 |
| 1896 | 10,176 | 3,064 | 30.0 | 129 | 49 | 158 | 22 | 1 | 113 | 199 | 31 | 72 |
| 1897 | 9,587 | 2,663 | 27.7 | 104 | 42 | 108 | 26 | .... | 76 | 70 | 28 | 58 |
| 1898 | 9,632 | 2,416 | 25.0 | 95 | 34 | 122 | 26 | .... | 123 | 112 | 21 | 44 |
| 1899 | 12,421 | 2,590 | 21.0 | 65 | 32 | 111 | 12 | 1 | 71 | 51 | 43 | 77 |
| 1900 | 10,552 | 2,788 | 25.5 | 94 | 29 | 144 | 17 | .... | 75 | 154 | 43 | 79 |
| 1901 | 12,524 | 2,557 | 20.5 | 84 | 38 | 192 | 14 | 10 | 108 | 59 | 33 | 56 |
| **February:** | | | | | | | | | | | | |
| 1887 | 6,353 | 2,439 | 36.8 | 159 | 39 | 57 | 46 | 21 | 79 | 239 | 28 | 33 |
| 1888 | 8,637 | 2,748 | 32.0 | 154 | 44 | 84 | 49 | 10 | 239 | 55 | 39 | 49 |
| 1889 | 8,183 | 2,933 | 35.8 | 170 | 32 | 71 | 30 | 9 | 324 | 136 | 30 | 119 |
| 1890 | 9,130 | 2,370 | 27.5 | 118 | 37 | 94 | 39 | .... | 96 | 50 | 32 | 92 |
| 1891 | 8,704 | 2,813 | 32.5 | 141 | 41 | 127 | 32 | .... | 203 | 127 | 58 | 81 |
| 1892 | 10,755 | 3,139 | 29.2 | 123 | 53 | 98 | 33 | 7 | 290 | 89 | 79 | 41 |
| 1893 | 9,333 | 2,774 | 29.6 | 136 | 46 | 101 | 29 | 23 | 198 | 80 | 58 | 121 |
| 1894 | 9,417 | 2,943 | 31.2 | 125 | 42 | 86 | 24 | 53 | 139 | 125 | 41 | 50 |
| 1895 | 10,771 | 3,049 | 28.3 | 85 | 40 | 99 | 9 | 5 | 98 | 44 | 38 | 87 |
| 1896 | 9,825 | 2,892 | 29.5 | 116 | 31 | 121 | 28 | .... | 110 | 192 | 45 | 52 |
| 1897 | 9,826 | 2,743 | 28.0 | 97 | 32 | 98 | 23 | .... | 84 | 89 | 26 | 75 |
| 1898 | 9,213 | 2,543 | 27.5 | 91 | 53 | 104 | 22 | .... | 93 | 84 | 32 | 47 |
| 1899 | 10,763 | 2,506 | 23.5 | 70 | 45 | 116 | 20 | 1 | 87 | 37 | 36 | 76 |
| 1900 | 10,796 | 3,142 | 29.1 | 107 | 49 | 122 | 18 | .... | 119 | 206 | 56 | 91 |
| 1901 | 11,022 | 2,482 | 22.6 | 86 | 41 | 114 | 11 | 35 | 126 | 74 | 54 | 52 |
| **March:** | | | | | | | | | | | | |
| 1887 | 7,830 | 2,551 | 32.5 | 211 | 42 | 72 | 54 | 24 | 98 | 152 | 42 | 48 |
| 1888 | 9,405 | 2,788 | 30.0 | 147 | 49 | 74 | 56 | 35 | 239 | 56 | 48 | 48 |
| 1889 | 9,547 | 3,381 | 35.4 | 167 | 43 | 69 | 47 | 1 | 386 | 150 | 33 | 157 |
| 1890 | 9,814 | 2,772 | 30.0 | 117 | 47 | 72 | 36 | 2 | 90 | 94 | 47 | 110 |
| 1891 | 10,872 | 3,118 | 29.2 | 115 | 63 | 121 | 42 | .... | 195 | 157 | 50 | 104 |
| 1892 | 10,978 | 2,342 | 21.3 | 124 | 77 | 96 | 37 | 3 | 285 | 114 | 70 | 48 |
| 1893 | 12,000 | 3,419 | 28.5 | 121 | 89 | 115 | 37 | 29 | 221 | 76 | 41 | 166 |
| 1894 | 10,196 | 3,215 | 31.5 | 137 | 52 | 13 | 26 | 47 | 179 | 164 | 46 | 95 |
| 1895 | 11,379 | 3,340 | 29.4 | 98 | 53 | 99 | 23 | .... | 131 | 99 | 51 | 83 |
| 1896 | 11,080 | 3,255 | 29.6 | 103 | 54 | 103 | 20 | 1 | 76 | 251 | 47 | 77 |
| 1897 | 11,574 | 3,281 | 29.2 | 92 | 55 | 83 | 26 | 2 | 99 | 113 | 45 | 121 |
| 1898 | 10,200 | 2,860 | 28.0 | 96 | 73 | 119 | 23 | .... | 108 | 144 | 24 | 89 |
| 1899 | 11,065 | 2,807 | 25.5 | 75 | 82 | 121 | 12 | 1 | 98 | 61 | 40 | 73 |
| 1900 | 11,033 | 3,574 | 27.4 | 93 | 50 | 120 | 23 | .... | 94 | 202 | 86 | 129 |
| 1901 | 11,913 | 3,070 | 25.8 | 94 | 61 | 111 | 6 | 39 | 200 | 100 | 50 | 57 |
| **April:** | | | | | | | | | | | | |
| 1887 | 7,967 | 2,443 | 30.6 | 136 | 56 | 56 | 75 | 12 | 112 | 111 | 45 | 30 |
| 1888 | 8,129 | 2,468 | 30.0 | 150 | 75 | 45 | 52 | 40 | 250 | 77 | 34 | 48 |
| 1889 | 9,078 | 3,116 | 34.5 | 174 | 45 | 78 | 64 | 2 | 363 | 148 | 47 | 137 |
| 1890 | 9,488 | 2,826 | 31.8 | 121 | 51 | 73 | 43 | 1 | 78 | 187 | 43 | 77 |
| 1891 | 13,981 | 2,809 | 27.3 | 92 | 67 | 103 | 48 | 1 | 273 | 159 | 42 | 106 |
| 1892 | 10,500 | 3,245 | 30.7 | 128 | 76 | 77 | 40 | 11 | 248 | 161 | 63 | 60 |
| 1893 | 11,865 | 3,339 | 28.1 | 111 | 104 | 111 | 34 | 23 | 199 | 73 | 55 | 133 |
| 1894 | 9,945 | 3,147 | 31.5 | 135 | 55 | 94 | 33 | 54 | 184 | 148 | 19 | 104 |
| 1895 | 10,545 | 3,506 | 33.3 | 115 | 78 | 115 | 32 | .... | 118 | 133 | 62 | 107 |
| 1896 | 10,480 | 3,246 | 31.0 | 111 | 50 | 87 | 33 | .... | 81 | 234 | 62 | 8 |
| 1897 | 10,325 | 2,813 | 27.3 | 95 | 55 | 79 | 27 | 7 | 81 | 98 | 44 | 90 |
| 1898 | 10,000 | 2,763 | 24.3 | 93 | 82 | 80 | 28 | .... | 84 | 126 | 29 | 118 |
| 1899 | 10,383 | 2,627 | 25.9 | 77 | 90 | 101 | 20 | 2 | 78 | 68 | 40 | 65 |
| 1900 | 12,486 | 3,376 | 27.1 | 86 | 61 | 96 | 23 | 1 | 92 | 191 | 94 | 117 |
| 1901 | 10,035 | 2,892 | 26.2 | 107 | 59 | 120 | 16 | 42 | 219 | 109 | 62 | 78 |

FIFTEEN YEARS

| Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 78 | 1,454 | 1,057 | 72 | 361 | 365 | 453 | 754 | 178 | 224 | 693 | 812 |
| 78 | 1,563 | 1,089 | 105 | 481 | 412 | 553 | 916 | 203 | 278 | 882 | 715 |
| 101 | 1,473 | 1,061 | 77 | 421 | 469 | 677 | 946 | 194 | 279 | 507 | 896 |
| 98 | 3,847 | 1,801 | 95 | 542 | 553 | 724 | 1,107 | 277 | 333 | 653 | 1,969 |
| 103 | 1,761 | 1,210 | 81 | 533 | 548 | 737 | 1,041 | 220 | 288 | 523 | 1,251 |
| 94 | 3,801 | 1,286 | 125 | 686 | 541 | 953 | 1,339 | 295 | 362 | 1,183 | 1,149 |
| 141 | 2,293 | 1,099 | 137 | 568 | 607 | 866 | 1,128 | 260 | 339 | 515 | 1,242 |
| 87 | 2,479 | 1,220 | 103 | 618 | 664 | 812 | 1,164 | 258 | 361 | 707 | 1,285 |
| 108 | 2,578 | 1,244 | 81 | 617 | 622 | 916 | 1,037 | 290 | 403 | 506 | 1,586 |
| 127 | 2,015 | 1,152 | 91 | 614 | 688 | 934 | 959 | 302 | 314 | 464 | 1,305 |
| 112 | 1,762 | 1,051 | 83 | 592 | 658 | 964 | 1,005 | 322 | 437 | 503 | 1,234 |
| 113 | 1,765 | 1,051 | 91 | 642 | 739 | 1,013 | 1,032 | 346 | 400 | 467 | 1,168 |
| 127 | 2,965 | 1,304 | 76 | 735 | 818 | 1,116 | 1,386 | 351 | 400 | 917 | 1,553 |
| 95 | 2,100 | 1,140 | 121 | 686 | 838 | 968 | 1,138 | 382 | 461 | 460 | 1,270 |
| 196 | 2,770 | 1,326 | 98 | 629 | 877 | 1,114 | 1,223 | 440 | 544 | 648 | 1,804 |
| 87 | 1,144 | 952 | 86 | 348 | 357 | 443 | 686 | 149 | 204 | 643 | 583 |
| 85 | 1,644 | 1,112 | 105 | 437 | 434 | 563 | 878 | 193 | 233 | 1,042 | 674 |
| 75 | 1,477 | 947 | 100 | 301 | 461 | 574 | 922 | 183 | 256 | 507 | 996 |
| 82 | 1,950 | 1,304 | 74 | 477 | 415 | 536 | 927 | 209 | 264 | 515 | 1,399 |
| 121 | 1,683 | 958 | 107 | 517 | 522 | 672 | 1,003 | 205 | 290 | 504 | 1,007 |
| 99 | 2,315 | 1,196 | 113 | 620 | 564 | 813 | 1,218 | 232 | 340 | 770 | 1,247 |
| 141 | 1,910 | 954 | 102 | 602 | 554 | 779 | 1,102 | 218 | 279 | 496 | 1,080 |
| 89 | 1,940 | 1,063 | 87 | 578 | 550 | 728 | 1,152 | 227 | 283 | 499 | 1,175 |
| 107 | 2,526 | 1,161 | 43 | 600 | 670 | 917 | 1,035 | 281 | 351 | 598 | 1,621 |
| 114 | 2,012 | 1,084 | 100 | 577 | 690 | 879 | 992 | 303 | 398 | 502 | 1,151 |
| 134 | 1,996 | 1,117 | 73 | 614 | 628 | 956 | 1,071 | 351 | 403 | 495 | 1,176 |
| 119 | 1,738 | 1,031 | 75 | 673 | 754 | 763 | 1,123 | 309 | 337 | 483 | 1,098 |
| 101 | 2,329 | 1,204 | 64 | 651 | 765 | 1,045 | 1,200 | 320 | 412 | 710 | 1,308 |
| 137 | 2,402 | 1,131 | 107 | 543 | 873 | 866 | 1,109 | 396 | 471 | 463 | 1,285 |
| 200 | 2,292 | 1,130 | 114 | 614 | 832 | 1,095 | 1,135 | 371 | 403 | 603 | 1,486 |
| 624 | 1,203 | 664 | 103 | 367 | 377 | 535 | 839 | 197 | 260 | 775 | 857 |
| 107 | 1,732 | 1,218 | 137 | 441 | 422 | 593 | 970 | 204 | 280 | 1,090 | 916 |
| 115 | 1,840 | 1,195 | 109 | 468 | 488 | 662 | 1,004 | 228 | 237 | 624 | 1,092 |
| 94 | 1,929 | 1,238 | 99 | 511 | 471 | 709 | 1,051 | 235 | 314 | 520 | 1,663 |
| 104 | 2,307 | 1,318 | 112 | 613 | 611 | 771 | 1,165 | 283 | 290 | 696 | 1,270 |
| 108 | 2,390 | 1,272 | 137 | 638 | 583 | 802 | 1,305 | 276 | 823 | 690 | 1,192 |
| 163 | 2,451 | 1,286 | 131 | 699 | 695 | 885 | 1,330 | 303 | 334 | 589 | 1,344 |
| 124 | 1,814 | 1,190 | 110 | 638 | 633 | 760 | 1,196 | 262 | 346 | 476 | 1,366 |
| 137 | 2,395 | 1,274 | 104 | 691 | 721 | 971 | 1,160 | 312 | 417 | 714 | 1,499 |
| 142 | 2,310 | 1,490 | 121 | 695 | 744 | 1,031 | 1,180 | 316 | 414 | 586 | 1,050 |
| 146 | 2,485 | 1,290 | 117 | 672 | 737 | 1,136 | 1,208 | 375 | 441 | 615 | 1,531 |
| 123 | 1,872 | 1,166 | 89 | 718 | 810 | 901 | 1,251 | 382 | 430 | 511 | 1,186 |
| 126 | 2,145 | 1,284 | 81 | 726 | 838 | 1,052 | 1,290 | 418 | 419 | 588 | 1,890 |
| 167 | 3,137 | 1,363 | 160 | 689 | 982 | 1,132 | 1,301 | 443 | 437 | 591 | 1,585 |
| 215 | 2,522 | 1,293 | 122 | 644 | 884 | 1,116 | 1,324 | 409 | 409 | 532 | 1,542 |
| 112 | 1,341 | 1,146 | 100 | 434 | 432 | 512 | 844 | 207 | 282 | 833 | 747 |
| 113 | 1,332 | 1,117 | 90 | 407 | 404 | 549 | 966 | 186 | 265 | 738 | 890 |
| 122 | 1,656 | 1,092 | 125 | 429 | 478 | 574 | 986 | 222 | 311 | 590 | 1,029 |
| 97 | 1,781 | 1,138 | 75 | 599 | 484 | 691 | 1,046 | 220 | 330 | 460 | 1,578 |
| 122 | 4,357 | 1,377 | 92 | 596 | 645 | 869 | 1,348 | 271 | 418 | 901 | 1,816 |
| 131 | 2,051 | 1,252 | 126 | 666 | 576 | 822 | 1,291 | 240 | 400 | 466 | 1,233 |
| 143 | 2,943 | 1,329 | 124 | 678 | 637 | 865 | 1,413 | 304 | 402 | 572 | 1,279 |
| 117 | 1,748 | 1,091 | 85 | 688 | 604 | 741 | 1,102 | 298 | 499 | 501 | 1,319 |
| 151 | 2,135 | 1,320 | 83 | 666 | 653 | 917 | 1,017 | 282 | 433 | 494 | 1,425 |
| 187 | 2,124 | 1,189 | 98 | 635 | 641 | 919 | 1,080 | 320 | 480 | 471 | 1,356 |
| 137 | 1,893 | 1,158 | 105 | 646 | 742 | 979 | 1,167 | 375 | 455 | 517 | 1,359 |
| 137 | 1,869 | 1,100 | 91 | 671 | 782 | 884 | 1,218 | 333 | 435 | 481 | 1,200 |
| 138 | 1,895 | 1,187 | 93 | 760 | 820 | 997 | 1,206 | 346 | 430 | 552 | 1,318 |
| 117 | 2,962 | 1,302 | 125 | 852 | 860 | 1,080 | 1,270 | 410 | 469 | 578 | 1,509 |
| 200 | 1,899 | 1,296 | 101 | 613 | 867 | 1,058 | 1,268 | 423 | 481 | 447 | 1,404 |

## MORTALITY OF THE MONTHS

| MONTHS | Total number of deaths | Deaths under five years | Percentage of deaths under five years to total deaths | Zymotic deaths per 1000 deaths from all causes | Cerebro-spinal fever | Typhoid fever | Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **May:** | | | | | | | | | | | | |
| 1887 | 7,528 | 2,457 | 32.6 | 153 | 52 | 37 | 66 | 42 | 114 | 96 | 41 | 27 |
| 1888 | 9,032 | 2,891 | 42.1 | 141 | 62 | 59 | 68 | 42 | 277 | 109 | 50 | 49 |
| 1889 | 8,357 | 2,773 | 33.1 | 155 | 42 | 63 | 37 | .... | 276 | 108 | 40 | 121 |
| 1890 | 9,194 | 2,740 | 31.6 | 130 | 62 | 72 | 55 | .... | 60 | 200 | 34 | 68 |
| 1891 | 10,213 | 2,917 | 28.6 | 117 | 57 | 88 | 35 | .... | 252 | 184 | 37 | 79 |
| 1892 | 10,223 | 3,289 | 32.3 | 139 | 69 | 71 | 50 | 13 | 245 | 254 | 56 | 69 |
| 1893 | 10,718 | 3,080 | 28.7 | 128 | 159 | 93 | 40 | 21 | 193 | 92 | 43 | 127 |
| 1894 | 9,286 | 2,862 | 30.8 | 139 | 53 | 85 | 29 | 37 | 140 | 97 | 36 | 97 |
| 1895 | 9,452 | 2,888 | 30.5 | 116 | 46 | 92 | 38 | 1 | 83 | 183 | 36 | 77 |
| 1896 | 9,541 | 2,842 | 30.0 | 119 | 51 | 59 | 38 | 1 | 78 | 172 | 40 | 100 |
| 1897 | 9,266 | 2,469 | 27.0 | 103 | 51 | 65 | 44 | 7 | 98 | 119 | 35 | 62 |
| 1898 | 9,748 | 2,690 | 27.0 | 93 | 81 | 86 | 27 | .... | 113 | 109 | 30 | 112 |
| 1899 | 9,556 | 2,366 | 25.0 | 79 | 71 | 93 | 14 | 5 | 76 | 85 | 45 | 37 |
| 1900 | 10,938 | 3,160 | 29.0 | 93 | 51 | 102 | 28 | 1 | 71 | 161 | 52 | 111 |
| 1901 | 10,327 | 2,630 | 25.4 | 112 | 43 | 96 | 15 | 67 | 226 | 95 | 44 | 69 |
| **June:** | | | | | | | | | | | | |
| 1887 | 7,484 | 2,020 | 40.0 | 240 | 57 | 54 | 77 | 7 | 109 | 65 | 26 | 30 |
| 1888 | 8 368 | 3,306 | 39.7 | 227 | 40 | 45 | 59 | 11 | 233 | 130 | 25 | 61 |
| 1889 | 8,370 | 3,632 | 43.4 | 241 | 27 | 45 | 59 | .... | 154 | 64 | 20 | 120 |
| 1890 | 9,185 | 3,515 | 40.2 | 217 | 28 | 69 | 52 | 1 | 68 | 161 | 29 | 90 |
| 1891 | 9,321 | 3,615 | 38.8 | 186 | 42 | 80 | 46 | .... | 207 | 133 | 41 | 65 |
| 1892 | 9,075 | 3,437 | 37.7 | 188 | 57 | 5 | 62 | 10 | 183 | 255 | 37 | 59 |
| 1893 | 8,728 | 2,885 | 33.0 | 162 | 96 | 83 | 42 | 10 | 154 | 99 | 24 | 77 |
| 1894 | 9,805 | 3,588 | 36.6 | 182 | 32 | 72 | 43 | 24 | 121 | 60 | 15 | 79 |
| 1895 | 8,736 | 3,114 | 35.6 | 175 | 40 | 81 | 35 | .... | 71 | 217 | 28 | 95 |
| 1896 | 9 342 | 3,466 | 37.0 | 183 | 44 | 66 | 37 | .... | 50 | 140 | 22 | 85 |
| 1897 | 9,028 | 2,865 | 31.5 | 140 | 51 | 66 | 31 | 7 | 82 | 86 | 31 | 74 |
| 1898 | 8,637 | 2,458 | 30.0 | 122 | 104 | 70 | 22 | .... | 82 | 99 | 17 | 111 |
| 1899 | 9,433 | 3,104 | 33.0 | 146 | 62 | 80 | 22 | 7 | 71 | 102 | 31 | 73 |
| 1900 | 9,444 | 3,101 | 33 0 | 120 | 39 | 65 | 26 | 1 | 44 | 120 | 40 | 71 |
| 1901 | 9,500 | 2,500 | 26.3 | 133 | 42 | 83 | 27 | 74 | 165 | 95 | 27 | 54 |
| **July:** | | | | | | | | | | | | |
| 1887 | 11,363 | 6,049 | 52.7 | 389 | 51 | 102 | 61 | 12 | 69 | 66 | 15 | 48 |
| 1888 | 10,300 | 5,363 | 52.0 | 380 | 35 | 73 | 51 | 2 | 141 | 111 | 23 | 198 |
| 1889 | 10,806 | 5,563 | 51.4 | 252 | 46 | 117 | 61 | 1 | 69 | 33 | 14 | 112 |
| 1890 | 11,606 | 5,602 | 50.5 | 327 | 56 | 101 | 56 | .... | 45 | 91 | 12 | 133 |
| 1891 | 11,370 | 5,782 | 50.8 | 329 | 57 | 97 | 44 | .... | 181 | 93 | 19 | 48 |
| 1892 | 13,555 | 6,855 | 52.1 | 340 | 59 | 131 | 61 | 8 | 75 | 150 | 20 | 138 |
| 1893 | 12,337 | 6,246 | 50.5 | 324 | 86 | 87 | 45 | 16 | 79 | 75 | 13 | 92 |
| 1894 | 12,516 | 6,160 | 50 0 | 395 | 50 | 93 | 44 | 19 | 76 | 55 | 14 | 121 |
| 1895 | 11,681 | 5,841 | 50.0 | 326 | 49 | 108 | 26 | .... | 32 | 130 | 20 | 143 |
| 1896 | 12,558 | 6,192 | 49.0 | 305 | 64 | 103 | 50 | .... | 55 | 85 | 12 | 117 |
| 1897 | 11,235 | 5,086 | 45 5 | 272 | 54 | 87 | 36 | 4 | 69 | 76 | 16 | 66 |
| 1898 | 11,441 | 4,945 | 43.0 | 255 | 68 | 89 | 24 | .... | 59 | 52 | 13 | 176 |
| 1899 | 11,291 | 4,819 | 42 6 | 239 | 56 | 94 | 34 | 1 | 45 | 82 | 21 | 101 |
| 1900 | 11,611 | 4,728 | 40.6 | 235 | 53 | 101 | 17 | 1 | 43 | 92 | 22 | 113 |
| 1901 | 12,248 | 4,314 | 35.5 | 236 | 51 | 99 | 24 | 89 | 105 | 81 | 17 | 71 |
| **August:** | | | | | | | | | | | | |
| 1887 | 9,012 | 4,130 | 45.3 | 383 | 41 | 194 | 98 | 6 | 55 | 24 | 16 | 57 |
| 1888 | 10,017 | 4,867 | 48.7 | 345 | 29 | 174 | 87 | 6 | 120 | 73 | 9 | 144 |
| 1889 | 9,373 | 4,059 | 40.7 | 280 | 33 | 224 | 96 | .... | 54 | 22 | 10 | 133 |
| 1890 | 10,642 | 4,480 | 48 8 | 292 | 49 | 167 | 86 | .... | 35 | 69 | 11 | 153 |
| 1891 | 10,720 | 4 829 | 45.0 | 297 | 38 | 171 | 67 | ... | 120 | 41 | 14 | 64 |
| 1892 | 10,903 | 4,933 | 45.2 | 292 | 54 | 182 | 56 | 18 | 61 | 51 | 19 | 138 |
| 1893 | 11,037 | 4,954 | 45.0 | 298 | 55 | 157 | 62 | 11 | 63 | 44 | 14 | 129 |
| 1894 | 10,399 | 4,664 | 44 8 | 283 | 44 | 183 | 41 | 6 | 48 | 19 | 17 | 129 |
| 1895 | 11,050 | 4,562 | 45.0 | 282 | 46 | 156 | 39 | .... | 26 | 76 | 17 | 156 |
| 1896 | 12,475 | 4,789 | 58.4 | 246 | 43 | 171 | 48 | .... | 19 | 54 | 20 | 132 |
| 1897 | 10,084 | 4,021 | 40.0 | 240 | 38 | 124 | 41 | .... | 19 | 40 | 13 | 84 |
| 1898 | 11,302 | 4,811 | 42.5 | 255 | 40 | 181 | 49 | .... | 26 | 26 | 16 | 162 |
| 1899 | 10,003 | 3,696 | 37.0 | 216 | 64 | 157 | 23 | .... | 26 | 49 | 15 | 120 |
| 1900 | 11,047 | 4,223 | 38.3 | 237 | 47 | 174 | 37 | 2 | 22 | 49 | 11 | 88 |
| 1901 | 10,999 | 4,339 | 40.0 | 285 | 43 | 168 | 36 | 40 | 49 | 40 | 9 | 80 |

FIFTEEN YEARS—(*Continued*)

| Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 142 | 1,098 | 1,052 | 71 | 379 | 378 | 445 | 870 | 191 | 359 | 714 | 814 |
| 131 | 1,438 | 1,195 | 98 | 458 | 481 | 570 | 1,009 | 211 | 370 | 738 | 988 |
| 123 | 1,172 | 1,102 | 86 | 511 | 421 | 599 | 951 | 227 | 377 | 548 | 1,061 |
| 142 | 1,538 | 1,077 | 95 | 539 | 508 | 691 | 999 | 273 | 371 | 436 | 1,554 |
| 127 | 2,138 | 1,234 | 114 | 561 | 555 | 741 | 1,021 | 248 | 434 | 629 | 1,349 |
| 113 | 1,972 | 1,207 | 108 | 617 | 610 | 736 | 1,159 | 270 | 461 | 443 | 1,180 |
| 175 | 1,944 | 1,239 | 86 | 660 | 664 | 834 | 1,287 | 286 | 544 | 508 | 1,284 |
| 136 | 1,333 | 1,093 | 93 | 644 | 577 | 745 | 1,056 | 265 | 487 | 427 | 1,271 |
| 157 | 1,459 | 1,149 | 83 | 628 | 669 | 903 | 1,022 | 270 | 503 | 413 | 1,250 |
| 205 | 1,474 | 1,193 | 93 | 647 | 644 | 852 | 1,066 | 326 | 555 | 400 | 1,155 |
| 113 | 1,357 | 1,054 | 80 | 637 | 716 | 935 | 1,001 | 386 | 478 | 449 | 1,211 |
| 127 | 1,576 | 1,127 | 84 | 695 | 757 | 915 | 1,171 | 375 | 478 | 489 | 1,193 |
| 122 | 1,389 | 1,169 | 93 | 716 | 763 | 912 | 1,117 | 359 | 555 | 484 | 1,249 |
| 157 | 1,899 | 1,284 | 96 | 785 | 797 | 983 | 1,200 | 392 | 581 | 492 | 1,405 |
| 236 | 1,406 | 1,224 | 92 | 649 | 769 | 1,114 | 1,195 | 434 | 590 | 415 | 1,285 |
| 887 | 587 | 948 | 56 | 516 | 404 | 458 | 784 | 190 | 362 | 597 | 805 |
| 811 | 778 | 868 | 94 | 516 | 393 | 491 | 1,075 | 237 | 411 | 472 | 1,130 |
| 1,112 | 744 | 919 | 77 | 639 | 386 | 485 | 951 | 222 | 376 | 414 | 1,133 |
| 1,087 | 972 | 984 | 83 | 679 | 497 | 541 | 1,000 | 237 | 452 | 347 | 1,433 |
| 808 | 1,098 | 978 | 103 | 720 | 479 | 678 | 1,127 | 224 | 534 | 353 | 1,286 |
| 676 | 1,060 | 1,005 | 89 | 692 | 449 | 693 | 1,132 | 248 | 545 | 368 | 1,080 |
| 478 | 1,010 | 1,065 | 67 | 612 | 503 | 679 | 1,108 | 240 | 560 | 384 | 1,073 |
| 739 | 1,037 | 982 | 84 | 723 | 583 | 718 | 1,180 | 307 | 628 | 419 | 1,334 |
| 627 | 825 | 974 | 63 | 665 | 592 | 718 | 927 | 275 | 620 | 357 | 1,188 |
| 915 | 877 | 1,097 | 69 | 793 | 625 | 782 | 947 | 290 | 551 | 385 | 1,205 |
| 503 | 945 | 1,002 | 83 | 784 | 643 | 864 | 1,037 | 325 | 530 | 362 | 1,178 |
| 372 | 857 | 1,007 | 96 | 783 | 656 | 780 | 1,031 | 367 | 581 | 361 | 1,062 |
| 686 | 883 | 1,028 | 76 | 869 | 709 | 746 | 1,087 | 403 | 661 | 409 | 1,192 |
| 477 | 1,058 | 1,070 | 90 | 874 | 705 | 807 | 1,057 | 397 | 637 | 358 | 1,265 |
| 450 | 965 | 1,111 | 97 | 596 | 751 | 957 | 981 | 418 | 723 | 379 | 1,259 |
| 3,669 | 477 | 956 | 90 | 738 | 406 | 429 | 1,259 | 227 | 499 | 729 | 1,185 |
| 2,957 | 588 | 966 | 73 | 784 | 383 | 492 | 930 | 210 | 397 | 454 | 1,111 |
| 3,092 | 537 | 1,012 | 63 | 844 | 449 | 542 | 1,029 | 227 | 357 | 502 | 1,394 |
| 2,916 | 706 | 1,073 | 60 | 1,024 | 497 | 543 | 1,092 | 242 | 553 | 395 | 1,718 |
| 2,908 | 717 | 1,032 | 67 | 1,036 | 502 | 652 | 1,158 | 2[illegible]0 | 458 | 363 | 1,397 |
| 3,629 | 801 | 1,093 | 96 | 1,264 | 556 | 700 | 1,648 | 266 | 842 | 447 | 1,503 |
| 3,206 | 746 | 1,073 | 72 | 1,219 | 552 | 729 | 1,252 | 300 | 598 | 383 | 1,333 |
| 3,258 | 688 | 1,024 | 64 | 1,184 | 527 | 638 | 1,282 | 296 | 683 | 392 | 1,408 |
| 2,974 | 627 | 1,040 | 83 | 1,135 | 590 | 732 | 1,000 | 322 | 549 | 364 | 1,425 |
| 3,086 | 755 | 1,050 | 72 | 1,267 | 661 | 842 | 1,169 | 349 | 649 | 409 | 1,541 |
| 3,396 | 693 | 991 | 92 | 1,117 | 564 | 804 | 1,090 | 323 | 750 | 410 | 1,383 |
| 2,298 | 710 | 1,116 | 67 | 1,244 | 646 | 793 | 1,118 | 380 | 762 | 388 | 1,279 |
| 2,068 | 748 | 1,076 | 70 | 1,428 | 755 | 690 | 981 | 396 | 645 | 402 | 1,405 |
| 2,082 | 729 | 1,102 | 75 | 1,446 | 727 | 798 | 1,016 | 431 | 857 | 377 | 1,354 |
| 2,231 | 602 | 1,062 | 79 | 609 | 776 | 821 | 1,175 | 334 | 2,020 | 409 | 1,372 |
| 2,158 | 457 | 926 | 67 | 665 | 361 | 442 | 933 | 199 | 354 | 731 | 956 |
| 2,465 | 528 | 959 | 74 | 647 | 402 | 473 | 1,010 | 227 | 370 | 530 | 1,345 |
| 1,901 | 591 | 1,026 | 63 | 680 | 437 | 540 | 936 | 254 | 373 | 477 | 1,196 |
| 2,192 | 566 | 1,064 | 70 | 871 | 442 | 537 | 1,125 | 236 | 512 | 375 | 1,749 |
| 2,405 | 675 | 1,041 | 87 | 925 | 480 | 612 | 1,133 | 257 | 617 | 477 | 1,235 |
| 2,328 | 704 | 1,056 | 73 | 985 | 512 | 662 | 1,208 | 279 | 572 | 369 | 1,301 |
| 2,406 | 661 | 1,040 | 13 | 986 | 534 | 676 | 1,167 | 283 | 600 | 432 | 1,314 |
| 2,068 | 621 | 1,081 | 71 | 945 | 573 | 626 | 1,011 | 295 | 543 | 405 | 1,331 |
| 2,303 | 668 | 1,051 | 67 | 1,027 | 523 | 741 | 1,034 | 357 | 597 | 457 | 1,404 |
| 2,326 | 636 | 1,059 | 69 | 1,062 | 644 | 802 | 1,113 | 294 | 1,695 | 508 | 1,518 |
| 1,799 | 597 | 1,027 | 92 | 1,023 | 617 | 803 | 879 | 387 | 600 | 387 | 1,265 |
| 2,345 | 613 | 1,019 | 67 | 1,288 | 651 | 749 | 1,062 | 390 | 709 | 430 | 1,349 |
| 1,535 | 599 | 1,034 | 75 | 1,091 | 679 | 736 | 955 | 394 | 576 | 433 | 1,271 |
| 1,985 | 577 | 1,047 | 84 | 1,244 | 681 | 773 | 995 | 436 | 777 | 379 | 1,443 |
| 2,555 | 509 | 1,078 | 81 | 693 | 629 | 831 | 993 | 411 | 683 | 361 | 1,568 |

## MORTALITY OF THE MONTHS

| MONTHS | Total number of deaths | Deaths under five years | Percentage of deaths under five years to total deaths | Zymotic deaths per 1000 deaths from all causes | Cerebro-spinal fever | Typhoid fever | Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **September:** | | | | | | | | | | | | |
| 1887 | 8,267 | 3,218 | 39.0 | 261 | 38 | 248 | 141 | 10 | 83 | 16 | 11 | 44 |
| 1888 | 8,433 | 3,877 | 45.9 | 294 | 31 | 279 | 102 | 12 | 114 | 43 | 11 | 142 |
| 1889 | 8,264 | 3,179 | 38.4 | 238 | 19 | 247 | 98 | 2 | 53 | 9 | 14 | 90 |
| 1890 | 9,111 | 3,356 | 39.0 | 224 | 30 | 234 | 84 | .... | 40 | 29 | 15 | 102 |
| 1891 | 9,662 | 3,984 | 41.2 | 247 | 59 | 287 | 83 | .... | 99 | 21 | 13 | 60 |
| 1892 | 9,610 | 3,737 | 38.8 | 235 | 48 | 280 | 74 | 9 | 78 | 37 | 16 | 93 |
| 1893 | 9,346 | 3,718 | 39.8 | 248 | 29 | 227 | 68 | 23 | 34 | 24 | 11 | 85 |
| 1894 | 9,525 | 3,948 | 41.5 | 244 | 28 | 229 | 51 | 9 | 33 | 15 | 11 | 102 |
| 1895 | 10,011 | 4,161 | 41.5 | 250 | 52 | 220 | 50 | .... | 26 | 36 | 15 | 119 |
| 1896 | 9,467 | 3,396 | 36.0 | 197 | 44 | 221 | 65 | .... | 26 | 31 | 11 | 102 |
| 1897 | 9,588 | 3,432 | 36.5 | 188 | 51 | 157 | 34 | .... | 31 | 19 | 12 | 76 |
| 1898 | 11,481 | 4,320 | 37.5 | 230 | 47 | 333 | 82 | .... | 26 | 20 | 6 | 120 |
| 1899 | 9,186 | 3,068 | 33.4 | 172 | 57 | 205 | 21 | .... | 19 | 34 | 6 | 85 |
| 1900 | 10,251 | 3,760 | 36.7 | 220 | 41 | 245 | 41 | ... | 12 | 21 | 16 | 66 |
| 1901 | 10,269 | 3,668 | 35.7 | 283 | 25 | 210 | 47 | 11 | 32 | 14 | 14 | 60 |
| **October:** | | | | | | | | | | | | |
| 1887 | 7,370 | 2,317 | 31.3 | 201 | 38 | 182 | 104 | 4 | 113 | 15 | 13 | 14 |
| 1888 | 7,866 | 2,522 | 32.0 | 196 | 33 | 288 | 109 | 12 | 125 | 43 | 19 | 102 |
| 1889 | 8,050 | 2,288 | 28.4 | 177 | 21 | 261 | 87 | .... | 57 | 7 | 13 | 70 |
| 1890 | 8,640 | 2,665 | 52.7 | 155 | 26 | 240 | 87 | .... | 62 | 47 | 6 | 84 |
| 1891 | 9,718 | 3,454 | 35.5 | 200 | 47 | 290 | 70 | .... | 118 | 36 | 14 | 54 |
| 1892 | 9,092 | 2,894 | 31.8 | 174 | 35 | 205 | 72 | 27 | 96 | 26 | 18 | 78 |
| 1893 | 8,981 | 2,994 | 33.4 | 185 | 56 | 253 | 50 | 19 | 65 | 14 | 16 | 56 |
| 1894 | 9,008 | 2,936 | 52.5 | 180 | 22 | 234 | 46 | 5 | 32 | 15 | 6 | 72 |
| 1895 | 9,320 | 2,951 | 31.5 | 167 | 36 | 265 | 50 | 2 | 36 | 46 | 13 | 95 |
| 1896 | 8,676 | 2,481 | 28.2 | 140 | 27 | 195 | 57 | .... | 35 | 37 | 12 | 67 |
| 1897 | 9,080 | 2,055 | 22.6 | 138 | 30 | 173 | 44 | .... | 49 | 33 | 15 | 59 |
| 1898 | 9,632 | 2,868 | 30.0 | 140 | 37 | 281 | 49 | .... | 38 | 10 | 14 | 59 |
| 1899 | 9,280 | 3,175 | 34.2 | 111 | 46 | 202 | 27 | 1 | 36 | 24 | 17 | 60 |
| 1900 | 9,676 | 2,864 | 29.6 | 146 | 36 | 283 | 37 | .... | 24 | 24 | 13 | 54 |
| 1901 | 9,738 | 2,627 | 27.0 | 150 | 25 | 235 | 40 | 14 | 38 | 20 | 17 | 53 |
| **November:** | | | | | | | | | | | | |
| 1887 | 7,292 | 2,171 | 29.7 | 200 | 29 | 149 | 80 | 4 | 130 | 30 | 25 | 22 |
| 1888 | 6,987 | 2,111 | 30.2 | 174 | 21 | 153 | 61 | 8 | 171 | 52 | 16 | 90 |
| 1889 | 7,285 | 2,025 | 27.7 | 139 | 21 | 169 | 63 | .... | 56 | 25 | 21 | 55 |
| 1890 | 8,209 | 2,199 | 28.5 | 146 | 29 | 216 | 68 | .... | 102 | 74 | 17 | 62 |
| 1891 | 8,727 | 2,528 | 29.0 | 151 | 39 | 241 | 61 | 2 | 179 | 31 | 26 | 31 |
| 1892 | 8,448 | 2,540 | 30.1 | 167 | 39 | 184 | 50 | 18 | 127 | 51 | 26 | 77 |
| 1893 | 8,458 | 2,324 | 27.5 | 157 | 45 | 180 | 30 | 27 | 77 | 56 | 14 | 50 |
| 1894 | 8,146 | 2,254 | 27.6 | 151 | 25 | 189 | 30 | 10 | 52 | 15 | 17 | 53 |
| 1895 | 8,372 | 2,287 | 27.4 | 134 | 24 | 204 | 43 | .... | 51 | 96 | 18 | 57 |
| 1896 | 7,888 | 2,165 | 27.5 | 113 | 26 | 132 | 21 | .... | 48 | 45 | 18 | 44 |
| 1897 | 8,325 | 2,045 | 24.5 | 108 | 31 | 151 | 28 | .... | 62 | 63 | 12 | 27 |
| 1898 | 8,709 | 1,970 | 22.7 | 90 | 36 | 189 | 30 | 1 | 32 | 18 | 17 | 52 |
| 1899 | 8,607 | 2,187 | 25.4 | 101 | 38 | 169 | 25 | .... | 54 | 75 | 26 | 47 |
| 1900 | 8,715 | 2,178 | 25.0 | 110 | 38 | 233 | 26 | 1 | 33 | 32 | 12 | 50 |
| 1901 | 9,309 | 2,097 | 22.6 | 110 | 26 | 147 | 23 | 9 | 81 | 49 | 6 | 39 |
| **December:** | | | | | | | | | | | | |
| 1887 | 7,886 | 1,497 | 31.6 | 190 | 36 | 104 | 78 | 12 | 204 | 44 | 35 | 21 |
| 1888 | 8,369 | 2,495 | 28.8 | 179 | 28 | 138 | 49 | 13 | 278 | 138 | 33 | 113 |
| 1889 | 8,483 | 2,311 | 27.0 | 126 | 38 | 117 | 53 | .... | 73 | 33 | 22 | 84 |
| 1890 | 8,761 | 2,635 | 30.0 | 135 | 30 | 157 | 59 | .... | 144 | 117 | 36 | 71 |
| 1891 | 11,241 | 3,023 | 26.9 | 133 | 32 | 183 | 47 | .... | 246 | 78 | 33 | 41 |
| 1892 | 9,528 | 2,754 | 28.9 | 146 | 24 | 147 | 40 | 17 | 195 | 82 | 22 | 82 |
| 1893 | 10,600 | 2,834 | 26.7 | 117 | 46 | 158 | 27 | 35 | 106 | 70 | 25 | 73 |
| 1894 | 9,000 | 2,567 | 28.5 | 133 | 33 | 139 | 35 | 11 | 82 | 35 | 34 | 53 |
| 1895 | 9,438 | 2,771 | 29.5 | 134 | 31 | 169 | 34 | .... | 75 | 172 | 34 | 72 |
| 1896 | 9,074 | 2,378 | 26.0 | 112 | 28 | 126 | 30 | .... | 63 | 50 | 20 | 59 |
| 1897 | 9,160 | 2,195 | 25.0 | 97 | 28 | 160 | 20 | .... | 91 | 61 | 26 | 43 |
| 1898 | 10,877 | 2,269 | 21.0 | 70 | 35 | 156 | 22 | .... | 53 | 38 | 18 | 59 |
| 1899 | 9,833 | 2,441 | 25.0 | 93 | 39 | 155 | 18 | 2 | 69 | 88 | 33 | 72 |
| 1900 | 9,889 | 2,310 | 23.3 | 105 | 37 | 263 | 16 | 7 | 60 | 81 | 21 | 53 |
| 1901 | 10,373 | 2,579 | 24.8 | 104 | 38 | 166 | 24 | 15 | 81 | 126 | 30 | 52 |

FIFTEEN YEARS—(*Concluded*)

| Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,009 | 697 | 989 | 45 | 522 | 352 | 503 | 722 | 232 | 331 | 765 | 959 |
| 1,440 | 649 | 895 | 69 | 600 | 343 | 494 | 895 | 198 | 303 | 510 | 995 |
| 1,094 | 646 | 946 | 65 | 638 | 794 | 483 | 870 | 206 | 326 | 446 | 872 |
| 1,196 | 710 | 1,027 | 47 | 768 | 418 | 520 | 871 | 236 | 375 | 450 | 1,712 |
| 1,434 | 720 | 1,039 | 65 | 924 | 479 | 596 | 997 | 289 | 449 | 421 | 1,293 |
| 1,266 | 834 | 1,010 | 69 | 877 | 502 | 629 | 898 | 280 | 459 | 461 | 1,208 |
| 1,395 | 713 | 912 | 68 | 863 | 528 | 597 | 1,026 | 268 | 443 | 391 | 1,221 |
| 1,454 | 668 | 988 | 54 | 852 | 492 | 612 | 970 | 268 | 488 | 399 | 1,413 |
| 1,672 | 675 | 1,009 | 65 | 923 | 577 | 703 | 988 | 277 | 522 | 452 | 1,308 |
| 1,077 | 826 | 1,023 | 57 | 848 | 556 | 810 | 905 | 306 | 543 | 417 | 1,305 |
| 1,171 | 785 | 998 | 70 | 949 | 602 | 825 | 933 | 327 | 651 | 421 | 1,217 |
| 1,872 | 768 | 1,076 | 70 | 1,162 | 647 | 856 | 1,116 | 378 | 927 | 478 | 1,362 |
| 972 | 755 | 947 | 50 | 1,065 | 646 | 729 | 937 | 366 | 537 | 327 | 1,247 |
| 1,656 | 645 | 980 | 72 | 1,143 | 727 | 705 | 905 | 405 | 605 | 420 | 1,392 |
| 1,808 | 582 | 1,021 | 58 | 673 | 705 | 815 | 958 | 417 | 577 | 402 | 1,657 |
| 297 | 853 | 942 | 53 | 458 | 367 | 475 | 759 | 207 | 309 | 717 | 743 |
| 386 | 1,031 | 1,034 | 70 | 518 | 392 | 495 | 791 | 232 | 278 | 512 | 984 |
| 339 | 959 | 1,016 | 64 | 557 | 431 | 595 | 899 | 238 | 343 | 491 | 1,032 |
| 360 | 1,001 | 1,061 | 71 | 635 | 485 | 597 | 884 | 238 | 366 | 470 | 1,538 |
| 794 | 1,012 | 1,124 | 60 | 832 | 558 | 695 | 1,023 | 259 | 430 | 494 | 1,281 |
| 491 | 1,132 | 996 | 62 | 709 | 547 | 694 | 1,024 | 263 | 448 | 420 | 1,198 |
| 533 | 947 | 1,070 | 58 | 771 | 542 | 658 | 1,010 | 273 | 422 | 363 | 1,206 |
| 635 | 901 | 1,013 | 54 | 757 | 540 | 690 | 959 | 298 | 452 | 477 | 1,249 |
| 554 | 749 | 1,112 | 67 | 761 | 630 | 767 | 840 | 319 | 511 | 445 | 1,564 |
| 338 | 1,123 | 990 | 70 | 689 | 605 | 908 | 815 | 323 | 455 | 437 | 1,132 |
| 447 | 1,090 | 1,070 | 79 | 717 | 608 | 820 | 911 | 358 | 568 | 437 | 1,205 |
| 687 | 1,044 | 1,052 | 65 | 943 | 673 | 848 | 1,015 | 376 | 526 | 443 | 1,292 |
| 361 | 1,163 | 1,064 | 57 | 832 | 753 | 810 | 1,017 | 394 | 550 | 417 | 1,195 |
| 712 | 967 | 1,078 | 62 | 955 | 760 | 830 | 934 | 376 | 540 | 429 | 1,334 |
| 733 | 916 | 1,112 | 59 | 659 | 792 | 923 | 991 | 424 | 527 | 425 | 1,475 |
| 117 | 1,041 | 964 | 67 | 370 | 375 | 490 | 709 | 178 | 301 | 718 | 640 |
| 112 | 1,051 | 893 | 58 | 414 | 398 | 522 | 796 | 164 | 300 | 443 | 726 |
| 110 | 1,133 | 944 | 67 | 450 | 452 | 599 | 822 | 199 | 311 | 419 | 868 |
| 124 | 1,207 | 1,019 | 74 | 518 | 435 | 554 | 851 | 208 | 287 | 409 | 1,388 |
| 143 | 1,507 | 1,017 | 65 | 583 | 501 | 656 | 967 | 237 | 404 | 437 | 1,033 |
| 137 | 1,445 | 940 | 55 | 582 | 490 | 674 | 845 | 244 | 377 | 382 | 1,008 |
| 152 | 1,242 | 957 | 57 | 595 | 529 | 691 | 925 | 242 | 411 | 469 | 1,069 |
| 146 | 1,130 | 1,020 | 48 | 566 | 575 | 661 | 880 | 262 | 383 | 392 | 991 |
| 150 | 1,348 | 979 | 71 | 583 | 584 | 750 | 798 | 263 | 473 | 370 | 1,027 |
| 132 | 1,184 | 876 | 66 | 524 | 599 | 828 | 772 | 330 | 443 | 355 | 1,017 |
| 191 | 1,153 | 977 | 78 | 605 | 667 | 867 | 841 | 308 | 432 | 418 | 1,075 |
| 165 | 1,288 | 1,049 | 54 | 625 | 681 | 918 | 998 | 380 | 450 | 451 | 1,027 |
| 132 | 1,274 | 1,027 | 61 | 642 | 729 | 832 | 916 | 370 | 457 | 412 | 1,014 |
| 231 | 1,172 | 1,011 | 66 | 644 | 758 | 764 | 955 | 390 | 412 | 401 | 1,132 |
| 300 | 1,208 | 1,063 | 74 | 537 | 841 | 1,002 | 1,000 | 410 | 478 | 364 | 1,326 |
| 78 | 2,205 | 1,022 | 75 | 441 | 408 | 543 | 798 | 208 | 295 | 761 | 636 |
| 87 | 1,392 | 1,017 | 95 | 434 | 461 | 584 | 917 | 232 | 345 | 577 | 817 |
| 110 | 1,635 | 1,127 | 83 | 463 | 466 | 656 | 950 | 238 | 288 | 455 | 1,046 |
| 80 | 1,756 | 1,045 | 85 | 533 | 483 | 643 | 1,000 | 257 | 285 | 454 | 1,029 |
| 115 | 2,731 | 1,090 | 100 | 646 | 593 | 801 | 1,183 | 296 | 416 | 732 | 1,153 |
| 113 | 1,737 | 1,145 | 78 | 575 | 572 | 779 | 1,132 | 259 | 404 | 416 | 1,026 |
| 123 | 2,445 | 1,099 | 80 | 581 | 610 | 792 | 1,078 | 254 | 359 | 724 | 1,237 |
| 103 | 1,555 | 1,117 | 58 | 551 | 628 | 719 | 1,033 | 269 | 284 | 401 | 1,098 |
| 115 | 1,741 | 1,054 | 79 | 596 | 609 | 931 | 866 | 306 | 510 | 399 | 1,083 |
| 127 | 1,454 | 1,062 | 66 | 604 | 673 | 899 | 927 | 330 | 495 | 443 | 1,098 |
| 121 | 1,541 | 1,056 | 61 | 610 | 679 | 952 | 981 | 344 | 427 | 501 | 1,118 |
| 141 | 2,250 | 1,185 | 71 | 657 | 845 | 1,091 | 1,177 | 369 | 479 | 562 | 1,425 |
| 112 | 1,793 | 1,088 | 82 | 648 | 789 | 941 | 1,085 | 416 | 451 | 437 | 1,184 |
| 143 | 1,587 | 1,082 | 78 | 733 | 793 | 970 | 1,113 | 413 | 467 | 454 | 1,160 |
| 213 | 1,923 | 1,050 | 94 | 562 | 835 | 1,103 | 1,123 | 442 | 491 | 454 | 1,210 |

## THE INFANT MORTALITY

Of the 129,257 deaths, 35,775 occurred under the age of five years, 28.0 per cent. The average of the 10 years preceding was 39,790 infant deaths, being 33.0 per cent of the total. There has been a decrease, both relatively and absolutely, in the mortality of early life during the 10 years. There were more deaths under the age of five years in 1892 than in any year since, 42,434, and during the first five years of the decade 41,550 deaths annually against 37,340 in the last five years, and relatively 34.0 per cent of the deaths of all ages were infantile in the first five years against 30.0 in the last five years. The saving has been in the summer mortality of early life.

## THE ZYMOTIC MORTALITY

Preventable diseases (including cerebro-spinal meningitis, typhoid fever, malarial diseases, smallpox, scarlet fever, measles, erysipelas, whooping cough, diphtheria and acute diarrhea) caused 14.5 per cent of the deaths against an average of 15.5 for the last 10 years. In each 10,000 of population there were in the state 21 zymotic deaths; in the Maritime district, 34; in the Hudson valley, 18; in the Adirondack and Northern, 16; in the Mohawk valley, 17; in the Southern tier, 17; in the East central, 13; in the West central, 10, and in the Lake Ontario and Western, 20.

*Epidemic influenza (grippe)*—In December, 1889, there began an outbreak of influenza in this state, and no winter since has been free from a recurrence of an epidemic of it. Prior to 1889 it was not noted as a cause of death; its appearance then was part of a pandemic, which reached New York the middle of December. It quickly spread to all parts of the state and lasted for a period of three months, when it subsided. January felt the weight of this epidemic, its mortality from all causes being 13,000 against a preceding average for the month of 7600. Here was manifestly a new element of morbific influence upon the population; it came as an unexpected and often not recognized

disturbance in the sanitary equilibrium of the state, potent enough to cause 2000 more deaths in this month than in the month of July, uniformly the month of largest death rate in the year. During the three months of its prevalence the normal mortality rate was increased by 5000, for which it was evidently accountable, although the number of deaths returned as from this cause directly was much less than this. It increased the reported mortality chiefly of acute respiratory diseases which was nearly trebled, but also those from consumption, from diseases of the nervous, circulatory, digestive and urinary systems, besides swelling greatly the unclassified group of diseases under which many were recorded. Persons enfeebled by age or other causes succumbed to the disease, during its prevalence or later in the year. There would appear to have been a rate of mortality during the epidemic of nearly one to 1000 of population. What proportion of the population was in any way affected by the disease is a matter of conjecture, but it has been estimated that hardly more than 50 per cent escaped it; assuming which, about one in 400 of the cases were fatal directly or indirectly.

Every year since, in the winter season it has recurred, the annual epidemic having various characteristics. Instead of the fulminant character of the first epidemic, the next came gradually. It was reported as prevalent in the western states a considerable time before its presence was appreciated here. Cases were noted here and there, and it took hold of communities less acutely. There were reports of death from it in January and February, in March there was an abrupt rise in the daily mortality and 1000 deaths came from it, but it was not till April that it reached a height not since exceeded, and produced a mortality greater than has ever been recorded in any month on record in this state, 14,000 deaths having occurred from all causes—a rate of mortality for a year of 30 per 1000 population. The common zymotic mortality rate was undisturbed, 2.70 per 1000 population; 30 per cent of the deaths were from acute respiratory diseases. The epidemic lasted six months and caused 8000 deaths.

After an interval of five months, the third epidemic recurred, in December of the same year, this time so abruptly as to cause 2000 deaths in its first month. The brunt of the epidemic fell on January, when the total mortality was less than that of the preceding April by but 500, of which 4000 were caused by grippe. This epidemic was in abeyance in May, lasting five months and causing a total mortality of 8000.

Again, in November (1892) it recurred, this time gradually, for four months, causing but 500 deaths each month; then in March abruptly increasing to 1800; in April to 2000, after which it rapidly decreased, the entire epidemic causing in the six or seven months 6000 deaths.

The fifth recurrence set in in the same year (1893) in December, and was the mildest yet, causing in all but 3000 deaths. It was like the first, abrupt in onset, causing 1000 deaths the first month and 1200 in January, and like it short and causing less fatality.

The epidemic of 1895 (sixth of the series) began also abruptly, in January, was at its height in February and lasted three months, causing 5000 deaths.

The seventh recurrence began in December, lasted through April, causing but 500 deaths a month until March, when the number rose to 1500, the total mortality being less than 3000, the lowest of any yet. The eighth recurrence, beginning in January, 1897, was identical in phenomena with the seventh and caused the same mortality. The ninth lasted for six months, till May, causing at its highest month only 500 deaths and a total of 2500 deaths.

The anticipation that the decreasing severity of these epidemics, that of 1898, having had the lowest mortality of any, was an indication of the decadence and extinction of this exotic disease was dissipated by the outbreak of 1899. Beginning in December, 1898, with 1800 deaths, 3000 were caused by it in January, 2000 in February, 1300 in March, when it fell off. Abrupt in onset, it lasted five months and caused 7000 deaths.

The eleventh epidemic began in December of the same year and was the severest in effect of any. Beginning with 600

December it steadily increased to 3500 in March, and
d until June. It caused 11,500 deaths.
lfth epidemic commenced in December, 1900, affecting
lity by about 500 in that month; in January 3000
re probably due to it; in February, 1500; in March,
in April 500, making a mortality for the current epi-
mated at 7000.
le shows the series of influenza epidemics:

| Height reached | Duration | Number of deaths |
|---|---|---|
| January, 1890..... | 3 months | 5,000 |
| April, 1891..... | 6 months | 8,000 |
| January, 1892..... | 5 months | 8,000 |
| April, 1893..... | 6 months | 6,000 |
| January, 1894..... | 4 months | 3,000 |
| February, 1895..... | 4 months | 5,000 |
| March, 1896..... | 5 months | 2,750 |
| March, 1897..... | 4 months | 3,000 |
| March, 1898..... | 6 months | 2,500 |
| January, 1899..... | 5 months | 7,000 |
| March, 1900..... | 6 months | 11,500 |
| January, 1901..... | 5 months | 7,000 |

istribution of the disease it has not been found to be
her the city or the country. It is a disease of the
nths. It has varied greatly in severity in different
eems likewise to have varied greatly in virulence in
ocalities, and shown varying types. It likewise varies
' of spread. It is evidently communicable from the
directly, possibly mediately and conveyed in infected
Like all zymotic diseases, susceptibility to it varies;
ie, immunity does not follow a previous attack.
*fever*—There were 1741 deaths from this disease, the
r the past 10 years being 1670. The yearly mortality
from 1351 in 1897 to 1948 in 1900.
ole shows the distribution of it as compared with
m other diseases for a series of years:

*In each 1000 deaths there were from typhoid fever in the—*

| DISTRICTS | 1894 | 1895 | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 |
|---|---|---|---|---|---|---|---|---|
| Maritime district | 8 | 8 | 8 | 8 | 10 | 8 | 10 | 10 |
| Hudson valley district | 22 | 33 | 35 | 21 | 28 | 26 | 28 | 20 |
| Adirondack and Northern district | 22 | 25 | 26 | 18 | 23 | 26 | 26 | 17 |
| Mohawk valley district | 21 | 20 | 13 | 17 | 22 | 13 | 23 | 17 |
| Southern tier district | 26 | 26 | 32 | 14 | 20 | 20 | 24 | 18 |
| East central district | 22 | 20 | 18 | 12 | 21 | 19 | 20 | 18 |
| West central district | 16 | 10 | 13 | 10 | 10 | 11 | 20 | 13 |
| Lake Ontario and Western district | 25 | 20 | 16 | 16 | 21 | 17 | 17 | 20 |
| Entire state | 13 | 14 | 13 | 12 | 15 | 13 | 17 | 13 |

*Diphtheria*—From this, including croup, there were 3026 deaths reported, which was 1350 less than the average for the past 10 years, 500 less than the average for the past five years and 300 less than in 1900. They constituted 2.3 per cent of the deaths from all causes. The decrease was uniform throughout the state except in the Adirondack and Northern district and the Mohawk valley district, as shown by following table of relative mortality for a series of years:

*In each 1000 deaths there were from diphtheria in the—*

| DISTRICTS | 1894 | 1895 | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 |
|---|---|---|---|---|---|---|---|---|
| Maritime | 71 | 52 | 45 | 43 | 21 | 28 | 32 | 28 |
| Hudson valley | 31 | 28 | 26 | 28 | 18 | 19 | 21 | 20 |
| Adirondack and Northern | 28 | 18 | 27 | 25 | 11 | 10 | 14 | 17 |
| Mohawk valley | 28 | 11 | 15 | 20 | 15 | 19 | 20 | 23 |
| Southern tier | 39 | 21 | 15 | 17 | 13 | 13 | 20 | 13 |
| East central | 30 | 13 | 20 | 22 | 16 | 9 | 10 | 11 |
| West central | 17 | 14 | 10 | 14 | 6 | 12 | 15 | 6 |
| Lake Ontario and Western | 40 | 39 | 40 | 34 | 16 | 16 | 16 | 18 |
| Entire state | 56 | 41 | 38 | 35 | 22 | 23 | 25 | 23 |

*Scarlet fever*—There were 1430 deaths from this cause in the year, the average of the past 10 years being 1116, and of the past five years, 774. For the six years, 1895 to 1900, there was a uniformly low rate of mortality of less than 800 and in 1900 only 689. The increase of this year is double that number. In 1900 the deaths constituted .5 per cent of the total mortality, while this year they are 1.1 per cent. The increase has been chiefly in the Maritime district, but showed it to a less degree in

of the state except the Southern and Central, as seen able:

*ch 1000 deaths there were from scarlet fever in the—*

| DISTRICTS | 1900 | 1901 |
|---|---|---|
| rict | 6 | 15 |
| y district | 4 | 7 |
| nd Northern district | 4 | 6 |
| ey district | 3 | 4 |
| district | 5 | 3 |
| listrict | 3 | 5 |
| district | 3 | 2 |
| and Western district | 5 | 4 |
| state | 5 | 11 |

decreased everywhere from the high rate of last year mortality of the year fell from 1333 to 859. The de- is year was not to be expected, since customarily there or three years of high mortality succeeded by two or rs of low mortality, and the high rate of last year fol- very low rate in 1899, and likewise in the two years g, that of 1895 and 1896 being high. It appears to ex- ring a period of time or by prevalence in a locality the susceptible to its infection, so increasing or decreasing lity, as shown by this comparative table:

*each 1000 deaths there were from measles in the—*

| DISTRICTS | 1900 | 1901 |
|---|---|---|
| rict | 11 | 6 |
| y district | 10 | 5 |
| nd Northern district | 9 | 15 |
| y district | 11 | 8 |
| district | 6 | 5 |
| listrict | 8 | 13 |
| district | 5 | 6 |
| and Western district | 10 | 5 |
| state | 10 | 6 |

*ing cough*, like measles, has its series of two or three prevalence, followed by a similar period of decrease in . On the average there are about 1000 deaths a year in 1901 there were 721 deaths, in 1900, 1020. The sav-

ing this year has been in the Maritime district, where there were 50 per cent fewer deaths than in 1900. Its increased summer mortality seems to be more in urban than in rural districts.

*Acute diarrheal diseases* caused 9337 deaths, the average of the preceding 10 years being 8441. More than half the zymotic deaths were from this cause.

*In each 1000 deaths there were from acute diarrhea in the—*

| DISTRICTS | 1894 | 1895 | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 |
|---|---|---|---|---|---|---|---|---|
| Maritime | 80 | 80 | 71 | 70 | 74 | 55 | 56 | 93 |
| Hudson valley | 63 | 63 | 72 | 51 | 60 | 52 | 68 | 40 |
| Adirondack and Northern | 57 | 53 | 53 | 45 | 60 | 50 | 72 | 41 |
| Mohawk valley | 65 | 55 | 60 | 43 | 65 | 42 | 65 | 41 |
| Southern tier | 58 | 50 | 50 | 39 | 60 | 38 | 55 | 30 |
| East central | 64 | 56 | 62 | 38 | 54 | 34 | 68 | 31 |
| West central | 40 | 45 | 53 | 31 | 52 | 34 | 57 | 28 |
| Lake Ontario and Western | 104 | 100 | 93 | 76 | 90 | 70 | 86 | 60 |
| Entire state | 76 | 75 | 73 | 63 | 70 | 53 | 62 | 72 |

*Smallpox.* This state has participated in the universal prevalence of this disease and had the largest mortality in 1901 of any year on the records of this Department, 445 deaths. In the 17 years preceding this there were 1278 deaths, in some years hardly a single death occurring, 308 being the largest number in one year. It has never been widespread until 1898, and of the 1278 deaths mentioned only 140 occurred outside New York city, 86 of which occurred in the two years 1888 and 1894.

In 1898 the disease entered on a new phase, characterized largely by mildness, so that the mortality does not express the degree of prevalence and the disease fails of recognition whereby it has spread more largely.

In the fall of 1900 smallpox was brought into the eastern part of the state by a traveling troupe, to Albany, Schenectady and Gloversville, whence it spread to other places in the vicinity, chiefly to Watertown, Glens Falls, Cherry Valley and Syracuse, where and also at places near New York city it was prevalent at the beginning of the year.

It has existed during the year also in Southern tier towns brought from the adjoining state of Pennsylvania, in Ramapo,

Binghamton, Elmira, Port Jervis, in towns in Allegany county. During the first half of the year there was development of the disease at 40 or 50 different points. The largest number of deaths of the year occurred during May, June and July, after which there was a general diminution in its prevalence. Later in the year there was an extensive outbreak of considerable duration in Buffalo and in November it was brought by men from Canada seeking work in lumber camps in the Adirondack woods and very widely scattered, so that all through the winter and following spring (of 1902) it has prevailed in that extensive region. Inspectors from this Department have been constantly employed in that region and it has been brought largely under control, though at a few localities in Lewis, Franklin and Clinton counties it still lingers (June 1902), from new importations chiefly. Boards of health have been directed by this Department to adopt an ordinance prohibiting the employers of men in lumber camps from taking men not protected by vaccination, the enforcement of which would speedily relieve the region of this disease. During the year it developed at 110 localities and 1100 cases occurred outside New York city; in the metropolis there were reported 1982 cases. In 50 of these places there was but a single case and one-half the entire number occurred in 6 localities: Buffalo, Albany, Cohoes, Schenectady, Watertown and Gloversville. Of the 445 deaths, 426 occurred in the Maritime district. At the end of the year smallpox existed in 16 localities, in all of which except Buffalo, lumber camps about Tupper Lake, Binghamton and Watertown, there was but a single case.

*Consumption*—The average annual mortality from consumption for the past decade is 13,234, that of 1901 was 13,766. This is somewhat larger than that of any one year, but there is a remarkable uniformity, no year varying much from 13,000 deaths. The moderate increase is partly due to the effect of the grippe epidemic during the prevalence of which the death rate from consumption is excessive. There were nearly 2 deaths to 1000 population during the year.

*In each 1000 deaths there were from consumption in the—*

| DISTRICTS | 1894 | 1895 | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 |
|---|---|---|---|---|---|---|---|---|
| Maritime | 110 | 112 | 110 | 106 | 115 | 135 | 114 | 115 |
| Hudson valley | 111 | 107 | 115 | 112 | 115 | 110 | 110 | 113 |
| Adirondack and Northern | 115 | 114 | 116 | 108 | 112 | 99 | 100 | 110 |
| Mohaw valley | 111 | 113 | 104 | 95 | 106 | 91 | 90 | 93 |
| Southern tier | 81 | 86 | 86 | 75 | 75 | 83 | 76 | 75 |
| East central | 108 | 98 | 93 | 96 | 90 | 85 | 90 | 95 |
| West central | 118 | 100 | 90 | 90 | 90 | 87 | 84 | 89 |
| Lake Ontario and Western | 103 | 105 | 101 | 95 | 100 | 93 | 92 | 99 |
| Entire state | 108 | 109 | 110 | 108 | 108 | 110 | 106 | 106 |

The following in connection with this subject is from the April *Monthly Bulletin:*

A census of pulmonary tuberculosis was noticed in the last issue of this Bulletin, concerning which it was stated that blanks for the purpose were about to be prepared and issued. The State Department of Health desires to have the cooperation of all health officers in accumulating information as to the number of the population of the state having pulmonary tuberculosis. The present immediate purpose is not to require or obtain a personal registry of these cases, nor to institute a system of sanitary inspection or isolation of consumptives, but to obtain with such accuracy as it is possible to do, a record of the number of persons in each municipality who at this time are subjects of this disease; to learn the locality of the disease, its distribution and surroundings. This accumulation of data will be fundamental to more exact plans for its control; it will likewise be of great value in the discussion of the question of state care of consumption and also in determining the death rate from this cause. A further report of the source of infection would also be valuable in the study of the etiology of tuberculosis as well as its prophylaxis. We are not inaugurating a new work, for since 1893 something in this direction has been in operation. Chapter 661 of the laws of 1893 required health officers to report annually to the State Department of Health the number of cases of consumption within their jurisdiction, and more recently that report was required to be made monthly, with the report of contagious

diseases. A not inconsiderable amount of data has been gathered thereby, but it has not been universally observed although several of the cities have voluntarily returned the monthly cards issued from this office. It is desired now, however, that a more general report in the nature of a census of the existing cases of consumption be made, not only from towns and villages but from every local municipality. If this is carefully made it will furnish material for the more direct control of this disease as well as information as to its distribution and surrounding conditions.

We gather some facts from the returns of death from consumption. For one thing we learn the uniformity of the fatality attending it. Year by year, with little variation, the annual mortality as returned to this office has been approximately 13,000 deaths in this state. Deaths from other causes have varied so that its relative mortality has not been always the same but generally about 11.0 per cent of all the deaths of the year have been from pulmonary consumption. Every year for many years the number of deaths have been between 12,500 and 13,500. There is even but little variation in the mortality by months; season has not very materially affected the number of persons dying from it. Of 12,500 deaths occurring in the 12 months, 26.0 per cent will occur in the winter, 27.0 per cent in the spring, 23.0 per cent in the summer and 24.0 per cent in the fall months. Glancing down the column of figures which represent the number of deaths each month from consumption for a period of 15 years there are few of them which are below 1000, of which only six are below 900. There are 18 of these months in which there were over 1200 deaths recorded. June and November are the months in which the smaller figures indicate the mortality, and January, March and April those in which the larger figures are required.

No other class of diseases approaches consumption in this uniformity of fatality by months and years. The zymotic diseases, individually and collectively, vary widely with the

seasons and likewise from year to year; in the winter and spring 12.0 to 13.0 per cent of the deaths are zymotic, and in the summer the proportion rises to 25.0 or 35.0 per cent; in some years the percentage of these deaths has been 14.0 of the total mortality and in others it has been above 20.0. The mortality from acute respiratory diseases, consisting largely of pneumonia, has varied from 600 deaths in the summer to 2200 deaths in the winter months; and since 1890, when grippe definitely increased its mortality, the number of deaths in the year from this cause have ranged from 16,000 to over 20,000. The deaths from diseases of the digestive system in summer have been often double the number of the winter, though the variation in yearly mortality has been much less marked, and the local diseases are more uniform. Cancer is the only single cause of death that shows little change in the number of deaths from month to month and only varies from year to year by a steady but moderate increase; compared with consumption, cancer is one of the minor causes of death, having one-fourth the mortality.

We have further learned from its mortality records that consumption varies much in its distribution. The comparative mortality of 1900 agrees with the records of previous years; in the Maritime district 11.4 per cent of the deaths were from consumption; while in the Southern tier district 7.6 per cent were from this cause. These two districts were respectively the highest and the lowest; the Hudson valley district, which is the next highest, and the Lake Ontario and Western had a little less than 11.0 per cent of deaths from consumption. All the central, as well as the southern, parts of the state, with a larger rural population, about 65 to the square mile, have relatively low tuberculosis mortality.

The following table from a recent report of this Department shows the per capita mortality of a series of earlier years:

*Deaths from consumption per 10,000 population in the—*

| DISTRICTS | 1894 | 1895 | 1896 | 1897 | 1898 |
|---|---|---|---|---|---|
| time | 22.2 | 23.8 | 23.1 | 22.8 | 22.0 |
| on valley | 19.0 | 20.0 | 21.8 | 20.0 | 18.3 |
| ondack and Northern | 13.4 | 13.8 | 14.5 | 15.0 | 15.0 |
| awk valley | 15.5 | 17.5 | 17.4 | 13.5 | 15.0 |
| hern tier | 9.5 | 10.7 | 10.3 | 9.6 | 10 5 |
| central | 14.8 | 13.4 | 14.2 | 13.4 | 12.5 |
| central | 14.7 | 13.5 | 12.8 | 12.2 | 12.5 |
| Ontario and Western | 15.4 | 16.0 | 15.0 | 12.5 | 12.0 |

Uniformly it is seen that in the metropolis, which constitutes first district mainly, there occur yearly 23 deaths in 10,000 the population; in the Hudson valley district, with 10 aller and old cities, there are 20 deaths; while in the rest of state there are from 10 to 15 deaths to this number of living irly, the Southern tier of counties showing the lowest actual well as relative mortality. It is of course understood that Adirondack district has a large imported tuberculosis popu-ion, not only from this but other states, which swells its io although it has an average population of but 26 to the iare mile, and the Lake Ontario district two large cities of ent growth which at present swell its vigorous population. t generally the lesson from the mortality is that consump-n prevails as the density of population.

These general facts learned about pulmonary consumption m its mortality can be added to by ascertaining local details garding the living, their occupation, nationality, source of ection, residence, and other matters of environment. This ge state, with varied climate, population, industries, affords terial for a great deal of data fundamental to the practical idy of the disease. Apparently improving conditions and iitary work have been having some influence to control it; mortality has not increased with the population. But it ised 4000 more deaths last year than all of the common infec-us (zymotic) diseases, not including diarrhea, toward the con-l of which health authorities have been accustomed to turn ir chief energy and find the chief cause for existence. Con-

sumption having been found likewise infectious, and therefo preventable, it will be good work to find how the preventi can be practically accomplished.

*Cancer* has caused a steadily increasing mortality every ye in the last decade; the number of deaths for each year beginni with 1892 being: 3152, 3232, 3305, 3554, 3789, 4131, 4385, 45 4871, 5033.

The following table shows the actual reported mortality each of the sanitary districts for the past seven years:

| DISTRICTS | 1895 | 1896 | 1897 | 1898 | 1899 | 1900 | 19 |
|---|---|---|---|---|---|---|---|
| Maritime | 1,805 | 1,894 | 2,031 | 2,174 | 2,302 | 2,449 | 2 |
| Hudson valley | 356 | 404 | 425 | 419 | 415 | 476 | |
| Adirondack and Northern | 173 | 192 | 213 | 212 | 212 | 234 | |
| Mohawk valley | 207 | 189 | 243 | 264 | 255 | 295 | |
| Southern tier | 182 | 217 | 260 | 253 | 280 | 287 | |
| East central | 255 | 258 | 268 | 305 | 310 | 329 | |
| West central | 162 | 177 | 199 | 218 | 213 | 232 | |
| Lake Ontario and Western | 414 | 459 | 495 | 530 | 548 | 569 | |

Following the estimated population of the Monthly bullet there were in the sanitary districts:

*Deaths from cancer per 100,000 population—*

| DISTRICTS | 1898 | 1899 | 1900 | 1901 |
|---|---|---|---|---|
| Maritime | 58 | 57 | 62 | |
| Hudson valley | 60 | 56 | 68 | |
| Adirondack and Northern | 54 | 54 | 60 | |
| Mohawk valley | 67 | 65 | 74 | |
| Southern tier | 60 | 64 | 65 | |
| East central | 74 | 74 | 79 | |
| West central | 70 | 65 | 71 | |
| Lake Ontario and Western | 61 | 61 | 65 | |

The East central district shows uniformly the highest rate cancer mortality and the Adirondack and Northern the lowe estimating from the returns received.

*Acute respiratory diseases* caused 17,589 deaths, the avera of the five preceding years being 17,259, and the number of t year before being 19,232. About 70 per cent of these deat were reported from pneumonia. A large proportion of the 7( deaths from grippe fell under this head. Prior to 1890 ·

yearly mortality was 13,500; since then it has not been less than 16,000 and has exceeded 21,000.

*Percentage of acute respiratory to total mortality in the—*

| DISTRICTS | 1897 | 1898 | 1899 | 1900 | 1901 |
|---|---|---|---|---|---|
| Maritime | 14.5 | 15.0 | 16.0 | 17.4 | 14.5 |
| Hudson valley | 15.0 | 12.5 | 13.0 | 13.0 | 13.0 |
| Adirondack and Northern | 12.8 | 11.0 | 13.1 | 11.3 | 12.5 |
| Mohawk valley | 13.5 | 10.0 | 13.5 | 11.5 | 13.7 |
| Southern tier | 12.0 | 10.0 | 11.7 | 11.0 | 12.0 |
| East central | 12.3 | 11.0 | 13.0 | 10.0 | 11.2 |
| West central | 11.7 | 10.0 | 12.5 | 9.4 | 11.5 |
| Lake Ontario and Western | 13.0 | 12.1 | 13.5 | 11.5 | 12.5 |
| Entire state | 14.0 | 13.5 | 14.7 | 15.0 | 13.5 |

*The vision of school children*, which is the subject of the following communication from Dr. Peter A. Callan, printed in the Monthly bulletin, is one which, as mentioned by him, has received attention from this Department. Four years ago action was taken in the direction indicated. The matter has not received the attention from school authorities that it appears to us to warrant, possibly from failure on their part to receive notice of it. Health officers who will appreciate its importance may call the attention of the principals of schools and boards of education to the matter, and inform them that they may secure by application to the office of the Department of Health a schedule of instructions for teachers to test the eyes of school children with a Snellen test card, by means of which the eyes of all the pupils, or at least the backward ones, can readily be tested as to their sight, and blank forms are also furnished for report and record thereof. The instructions are so plain and the work so simple that it can be readily and easily done by anyone. With the approaching commencement of another school year it would be well if a general effort were made in the public schools of the state to obtain this information on the part of the school authorities regarding the normality or deviation therefrom of the eye-sight of school children, both for their educational and their hygienic well-being, although it is regarding the latter that this Department is specially concerned.

*Testing the eyes of school children*—In the United States it is now necessary for young men who desire to become policemen, firemen or railroad engineers to pass a physical examination.

The eyes are tested in a very simple manner. Each applicant must read Snellen's test card of letters at the correct distance. Simple as the test is it is astonishing how many young men fail in visual acuity. One eye may come up to the standard, but its fellow is unable to see the letters at the given distance. It is a safe statement to make that the majority of those that fail in this test of vision do so owing to some refractive error which could be corrected. It seems hardly necessary to call attention to the importance of testing the eyes of children attending the public schools. In this state, if we except the larger cities, very little is done to detect even gross errors of refraction. One or both eyes may be very imperfect, still the tasks are the same for all the children in the class and the lessons must be learned. Scholars are often classed as lazy or dullards who labor under great disadvantages on account of defective eyes. Many of these children find close application painful and visual effort well nigh impossible. It is natural for them to be backward in their lessons and become objects of unjust blame which they do not deserve.

The writer some years ago read a paper on this subject before the public school teachers—at their annual meeting in Syracuse, N. Y. A plan was outlined whereby the teacher of each class could test the vision of each one of her pupils. There was no expense attached to the method, as the cards for testing the eyes were furnished gratis to all teachers who applied for them. A few availed themselves of this offer, but the project fell through.

A few years ago this idea was elaborated by the New York State Board of Health and the principals of all public schools throughout the state were notified that the test cards and blanks were to be had for the asking. A request was made that children attending their schools should be examined. A printed schedule showed how the eyes should be tested. And

in the case of those children who were unable to read the correct line of letters at the given distance a record blank was to be used, giving in detail how much the scholar saw with each eye. The principal was then to notify the parents or guardians of the children with defective eyes, requesting that an examination be made by an eye doctor as to the trouble. By means of this simple method, which need only be done on the admission of the child to a class or the beginning of each school year, all gross errors can be eliminated and corrected. It is a simple thing to do and does not consume very much of the teacher's time. The scholars would benefit by it, and the teachers would be on the lookout for a cause to explain why certain children were backward in their studies. The parents or guardians would have the option of selecting any competent eye doctor to make the examination. In the case of the very poor, they could take their children to the eye clinics in the towns or cities and receive proper attention.

*Tetanus* has not been brought specially to the attention of the Department, but during the year came to public notice in connection with certain deaths from it following vaccination in another state. Dr. Herbert D. Pease, director of the new serum laboratory of the State Department of Health, contributed the following to the November Bulletin.

Tetanus is the typical toxic infectious disease. It occurs only as the result of the introduction of the bacillus or its spores into wounds. As a disease it is not subject to marked variations.

Its spore bearing bacillus develops only in the absence of oxygen. Other bacteria requiring oxygen for growth create favorable conditions for the development of the tetanus bacillus. Its chief habitat is in the fresh soil of certain localities. Its resistant spores are to be found in the dust from such soil.

The spores in the dust which become mixed with hay, oats, etc., fed to animals, develop in the intestinal canal and pass out into the dung in an active condition.

The bacillus, or its spores, gain entrance into the human body by the contamination with infected soil, dust, dung or pus of the

skin before injury, of the instrument causing the injury, or of the fresh wound afterwards. The skin is probably more often contaminated than is generally supposed, and the wounding agent much less so.

Certain conditions are essential to, or greatly favor the development of the infection. One is the introduction of foreign substances, dirt, chemicals or other bacteria into the wound with the tetanus spores. The introduction of the preformed toxin of the bacillus in minute amounts greatly favors the further growth.

The exclusion or disposal of oxygen from the blood and atmosphere in the wounded tissues is necessary for infection. This is often brought about by the death of the injured tissues and the growth of other bacteria requiring oxygen.

The infecting bacillus never passes into the body beyond the wounded area, and but very little development of the organism is necessary for the production of a fatal amount of toxin. The latter is frequently of frightful potency. Although present in the body in relatively large amount its toxic effects may not fully appear for several days. This was illustrated by the recent occurrence of tetanus in the diphtheria antitoxin horses in St. Louis, where 10 c.c. of the serum of a horse, which could not have had any positive symptoms of the disease when bled, contained enough of the entire amount of tetanus toxin present in the general circulation of the animal to make a fatal dose for a child. The entire blood of the horse must have contained over 3000 such fatal doses, yet the tetanic symptoms were not manifested at the time.

Tetanus toxin has a special affinity for the tissue elements of the nervous system, and after the union with such elements it cannot be recovered.

Antitoxim for the prevention and treatment of the disease is in use. In animals it has been demonstrated to be practically and absolutely preventive, and so far as present experience goes the same is true of human beings.

Experience in the infection of laboratory animals with the *tetanus bacillus* shows that the development of the disease is

d, even if the effect of the poison is not manifested clinically some days later. Excision and the application of disinfect- s to the wounded area are not positive safeguards unless ertaken almost immediately.

ı cases of wounds in human beings occurring in regions the of which is known to contain, or even to possibly contain, tetanus bacillus or its spores, where there has been any bable or possible contamination of the body surface or ues before, after or during the act of wounding, practical siderations demand that in addition to the regular surgical ıtment of the wound a preventive dose of tetanus antitoxin uld be given as soon as possible. This procedure is espe- ly indicated in cases where dirt, dust, sand, grain, manure l other foreign materials are ground well into the tissues, and ecially where the latter are so injured as to readily slough. ıctured wounds are also generally supposed to be of special ger. Fourth of July wounds seem to be especially danger- in localities where the soil is infected.

t has never been proven, nor is it very probable, that vaccine r contains the tetanus bacillus. In cases, therefore, of vac- ıtion or other surgical operations all that is especially indi- ed to prevent the disease is to observe the usual rules of gical cleanliness before and after the operation. Where sons undergoing such operations in infected or suspicious ılities are known to be so careless in their personal habits, ıer wilful or from ignorance, as to be likely to become con- ınated with the tetanus bacillus, a preventive dose of tetanus itoxin would certainly eliminate that source of danger. This uld be undertaken in the interests of the public health, for n such persons become fatally infected with tetanus serious ıry is done to the cause of vaccination, and for this reason, or no other, such persons should receive a protective injec- ı of tetanus antitoxin. Preventive medicine demands the tection of such valuable public sentiment as favor of rational ıns of protection against infectious diseases, as well as its ther education.

*Record of each reporting local board of health, showing total deaths from all causes and from the principal zymotic diseases for* 1901, *by counties*

[Cities are printed in SMALL CAPS, villages in *italic* and towns in Roman type]

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Albany county** | 165,571 | 2,934 | 4 | 60 | ..... | 7 | 10 | 8 | 62 | 101 | 359 |
| ALBANY | 94,151 | 1,751 | ..... | 20 | ..... | 5 | 6 | 3 | 45 | 42 | 239 |
| COHOES | 23,910 | 466 | 4 | 14 | ..... | 1 | 1 | 1 | 8 | 32 | 63 |
| Berne | 1,947 | 28 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Bethlehem | 4,226 | 47 | ..... | 2 | ..... | ..... | ..... | ..... | 1 | 2 | 3 |
| Coeymans | 3,952 | 44 | ..... | 2 | ..... | ..... | 1 | ..... | ..... | 4 | 2 |
| Guilderland | 3,530 | 48 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Knox | 1,244 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| New Scotland | 3,058 | 41 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Rensselaerville | 1,795 | 36 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Colonie | 7,035 | 109 | ..... | 4 | ..... | 1 | ..... | 1 | 2 | 3 | 7 |
| Westerlo | 1,632 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| WATERVLIET | 14,321 | 246 | ..... | 8 | ..... | ..... | ..... | 3 | 2 | 12 | 31 |
| *Green Island* | 4,770 | 83 | ..... | 4 | ..... | ..... | 2 | ..... | 3 | 4 | 9 |
| **Allegany county** | 41,501 | 519 | ..... | 6 | 1 | 1 | 1 | 6 | 1 | 4 | 19 |
| Alfred | 1,615 | 20 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 |
| Allen | 655 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Alma | 1,182 | 12 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Almond | 1,436 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Amity | 2,216 | 28 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 3 |
| Andover | 1,869 | 26 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Angelica | 1,639 | 21 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Belfast | 1,574 | 14 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 1 |
| Birdsall | 634 | 7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Centerville | 833 | 4 | | | | | | | | | |
| Clarksville | 836 | 5 | | | | | | | | | |
| Cuba | 2,369 | 29 | | | | | | | | | |
| Friendship | 2,136 | 30 | | | | | 1 | | | | 2 |
| Genesee | 1,052 | 6 | | | | | | | | | |
| Granger | 800 | 12 | | | | | | 1 | | | |
| Grove | 812 | 7 | | | | | | | 1 | 1 | |
| Hume | 1,749 | 25 | | | | | | | | | 1 |
| Independence | 1,280 | 6 | | | | | | | | | 1 |
| New Hudson | 926 | 25 | | | | | | | | | 1 |
| Rushford | 1,300 | 22 | | | | | | | | | 2 |
| Scio | 1,281 | 30 | | 2 | | | | | | | |
| Ward | 547 | 1 | | | | | | | | | |
| Wellsville | 4,981 | 92 | | 3 | | | | 2 | | 1 | 3 |
| West Almond | 601 | 4 | | | | | | | | | |
| Willing | 1,246 | 12 | | | | | | | | | |
| Wirt | 1,163 | 16 | | | | | | | | | |
| **Broome county** | **69,149** | **1,193** | **1** | **24** | **2** | **5** | **5** | **8** | **24** | **23** | **86** |
| BINGHAMTON | 39,647 | 755 | | 21 | 2 | 5 | 3 | 6 | 20 | 22 | 70 |
| Barker | 1,072 | 25 | | | | | | | | | |
| Binghamton | 847 | 15 | | | | | | | | | 2 |
| Chenango | 1,372 | 24 | | | | | | | | | 2 |
| Colesville | 2,773 | 37 | | | | | 1 | | | | 1 |
| Conklin | 946 | 17 | | | | | | | | | |
| Dickinson | 728 | 43 | | | | | | | | | 2 |
| Fenton | 1,171 | 16 | | | | | | | | | 1 |
| Kirkwood | 918 | 15 | | | | | | | | | |
| Lisle | 1,710 | 20 | | | | | | | | | 1 |
| Maine | 1,534 | 22 | | 1 | | | | | | | |
| Nanticoke | 666 | 10 | | | | | | | | | |
| Sanford | 3,514 | 29 | | | | | | | 1 | | 2 |
| Triangle | 1,727 | 22 | | 1 | | | | | | | |
| Union | 5,707 | 73 | 1 | 1 | | | | 1 | 3 | 1 | 1 |
| Vestal | 1,850 | 32 | | | | | 1 | 1 | | | 3 |
| Windsor | 2,967 | 38 | | | | | | | | | 1 |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhœa | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cattaraugus county** | 65,643 | 775 | ..... | 9 | ..... | 3 | ..... | 1 | 3 | 13 | 28 |
| OLEAN | 9,642 | 110 | ..... | 2 | ..... | 1 | ..... | 1 | ..... | 1 | 4 |
| Allegany | 3,692 | 28 | ..... | 1 | ..... | ..... | ..... | ..... | 1 | ..... | 3 |
| Ashford | 1,645 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Carrollton | 2,035 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cold Spring | 1,030 | 16 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Conewango | 1,224 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dayton | 1,691 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| East Otto | 1,138 | 17 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Elko | 571 | 5 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Ellicottville | 2,038 | 24 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Farmersville | 1,043 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Franklinville | 2,514 | 32 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Freedom | 1,209 | 12 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 2 | ..... |
| Great Valley | 1,697 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Hinsdale | 1,218 | 22 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Humphrey | 794 | 9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Ischua | 832 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Leon | 1,003 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Little Valley | 1,616 | 22 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Lyndon | 609 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Machias | 1,557 | 28 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Mansfield | 968 | 9 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... |
| Napoli | 967 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| New Albion | 2,372 | 25 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Olean | 4,854 | 56 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 2 | 2 |
| Otto | 1,105 | 17 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Perrysburgh | 1,216 | 17 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Persia* | *1,940* | *34* | | | | | | | | | 2 |
| Portville | *2,319* | *9* | | | | | | | | | |
| Randolph | 2,605 | 33 | | | | | | | | 2 | 3 |
| Red House | 973 | 14 | | | | | | | | 1 | 1 |
| *Salamanca* | 4,251 | 70 | | | | | | | 2 | 1 | 3 |
| Salamanca | 923 | 2 | | | | | | | | | |
| South Valley | 713 | 4 | | | | | | | | 1 | |
| Yorkshire | 1,738 | 22 | | | | | | | | | |
| **Cayuga county** | **66,284** | **940** | **2** | **10** | | **1** | **4** | **2** | **6** | **29** | **68** |
| AUBURN | 30,345 | 420 | 2 | 7 | | 1 | | 1 | 4 | 21 | 43 |
| Aurelius | 1,563 | 23 | | | | | | | | 1 | |
| Brutus | 2,582 | 32 | | | | | | | | 1 | 2 |
| Cato | 1,624 | 20 | | | | | | | | | 2 |
| Conquest | 1,360 | 19 | | | | | | | | | 2 |
| Fleming | 1,076 | 24 | | 1 | | | | | | 1 | |
| Genoa | 2,075 | 34 | | | | | | | | | 2 |
| Ira | 1,668 | 27 | | | | | | | | | 1 |
| Ledyard | 1,909 | 22 | | | | | | | | | |
| Locke | 1,079 | 15 | | | | | | | | | 1 |
| Mentz | 1,914 | 39 | | | | | | | | 2 | 3 |
| Montezuma | 991 | 8 | | | | | | | | | |
| Moravia | 2,373 | 46 | | | | | 3 | 1 | 1 | 1 | |
| Niles | 1,402 | 18 | | | | | | | | | 1 |
| Owasco | 1,331 | 14 | | | | | | | | | |
| Scipio | 1,657 | 18 | | | | | | | | | |
| Sempronius | 896 | 13 | | 1 | | | | | | | |
| Sennett | 1,440 | 40 | | | | | | | 1 | 1 | 4 |
| Springport | 1,770 | 20 | | 1 | | | | | | | 2 |
| Sterling | 2,516 | 44 | | | | | | | | | 1 |
| Summer Hill | 779 | 6 | | | | | | | | | 1 |
| Throop | 1,038 | 16 | | | | | | | | | 2 |
| Venice | 1,448 | 11 | | | | | | | | | |
| Victory | 1,398 | 11 | | | | | 1 | | | 1 | 1 |
| **Chautauqua county** | **88,314** | **1,098** | **5** | **19** | **1** | **4** | **5** | **10** | **10** | **31** | **7** |
| DUNKIRK | 11,616 | 165 | | 4 | | | 2 | 1 | | 10 | 7 |
| JAMESTOWN | 22,892 | 296 | 3 | 6 | | 1 | 1 | 4 | 5 | 8 | 9 |
| Arkright | 918 | 12 | | | | | | | | | 1 |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Chautauqua county**—(*Continued*) | | | | | | | | | | | |
| Busti | 2,192 | 17 | | | | | | | | 1 | |
| Carroll | 1,684 | 16 | | 1 | 1 | | | | | | 2 |
| Charlotte | 1,406 | 22 | | | | | | | | 1 | 1 |
| Chautauqua | 3,590 | 55 | | 2 | | | | | | | 3 |
| Cherry Creek | 1,745 | 22 | 1 | | | | | | | | 2 |
| Clymer | 1,229 | 10 | | | | | | | | | 2 |
| Dunkirk | 454 | | | | | | | | | | |
| Ellery | 1,628 | 18 | | | | | | | | | |
| Ellicott | 3,118 | 23 | | 1 | | | | | 1 | 1 | 2 |
| Ellington | 1,330 | 11 | 1 | | | | | | | | 2 |
| *Fredonia* | 4,127 | 64 | | | | 2 | | | 2 | 3 | 6 |
| French Creek | 1,014 | 4 | | | | | | | | 1 | |
| Gerry | 1,198 | 24 | | 1 | | | | | | 1 | 2 |
| Hanover | 4,778 | 63 | | 1 | | | | 3 | 1 | 2 | 4 |
| Harmony | 2,988 | 34 | | | | | 1 | 1 | | | |
| Kiantone | 491 | 8 | | | | | | | | | 1 |
| Mina | 1,038 | 7 | | | | | | | | | |
| Poland | 1,613 | 22 | | | | | | | 1 | | 2 |
| Pomfret | 2,186 | 23 | | | | | | | | | |
| Portland | 2,690 | 22 | | | | | | | | | |
| Ripley | 2,256 | 24 | | | | | | | | 1 | |
| Sheridan | 1,633 | 22 | | | | 1 | | | | | |
| Sherman | 1,560 | 10 | | 1 | | | 1 | | | | |
| Stockton | 1,852 | 19 | | 1 | | | | | | | 1 |
| Villenova | 1,206 | 16 | | 1 | | | | | | | 1 |
| Westfield | 1,452 | 24 | | | | | | | | | |
| *Westfield* | 2,430 | 45 | | | | | | 1 | | 2 | 5 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Chemung county** | 54,068 | 842 | 6 | 15 | ..... | 1 | 3 | 16 | 22 | 25 | 64 |
| ELMIRA | 35,672 | 570 | 5 | 9 | ..... | 1 | 1 | 15 | 18 | 15 | 51 |
| Ashland | 954 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Baldwin | 664 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Big Flats | 1,705 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Catlin | 1,109 | 8 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Chemung | 1,500 | 27 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Elmira | 1,260 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| Erin | 996 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Horseheads | 4,944 | 76 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 5 | 3 |
| Southport | 2,201 | 25 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| Van Etten | 1,406 | 28 | ..... | 2 | ..... | ..... | 2 | ..... | ..... | 2 | 1 |
| Veteran | 1,652 | 32 | ..... | 1 | ..... | ..... | ..... | 1 | 3 | ..... | 2 |
| **Chenango county** | 36,568 | 593 | ..... | 9 | ..... | 7 | 8 | 3 | 1 | 9 | 41 |
| Afton | 1,920 | 31 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Bainbridge | 1,991 | 30 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Columbus | 997 | 10 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 | 1 |
| Coventry | 987 | 17 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| German | 423 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Greene | 3,152 | 56 | ..... | 3 | ..... | ..... | 1 | ..... | ..... | 1 | 2 |
| Guilford | 2,208 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Lincklaen | 646 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| McDonough | 907 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| New Berlin | 2,525 | 34 | ..... | ..... | ..... | ..... | 3 | ..... | ..... | ..... | 5 |
| North Norwich | 801 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3 |
| Norwich | 1,238 | 18 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| *Norwich* | 5,766 | 124 | ..... | ..... | ..... | 7 | 2 | 1 | 1 | 6 | 15 |
| Otselic | 1,234 | 17 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Oxford | 3,545 | 78 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Pharsalia | 780 | 13 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 | 1 |
| Pitcher | 751 | 12 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Plymouth | 1,026 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Preston | 662 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Sherburne | 2,614 | 28 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 |
| Smithville | 1,105 | 9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Smyrna | 1,290 | 23 | ..... | 1 | ..... | ..... | ..... | 1 | ..... | ..... | 2 |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Clinton county** | 47,480 | 512 | 5 | 6 | ..... | 7 | 4 | 2 | 14 | 29 | 40 |
| Altona | 2,465 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Ausable | 2,195 | 35 | 1 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 4 |
| Beekmantown | 2,067 | 26 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Black Brook | 1,933 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Champlain | 4,748 | 52 | ..... | ..... | ..... | ..... | ..... | 2 | 3 | 1 | 5 |
| Chazy | 2,796 | 31 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Clinton | 1,574 | 17 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 5 |
| Dannemora | 3,720 | 25 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3 |
| Ellenburgh | 3,248 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Mooers | 3,572 | 50 | ..... | ..... | ..... | 5 | 1 | ..... | 2 | 1 | 2 |
| Peru | 2,372 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| Plattsburgh | 3,178 | 7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| *Plattsburgh* | 8,434 | 159 | 1 | 3 | ..... | 2 | 3 | ..... | 9 | 22 | 13 |
| Saranac | 3,463 | 32 | 1 | 2 | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| Schuyler Falls | 1,665 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| **Columbia county** | 43,211 | 703 | 3 | 21 | 1 | 1 | 2 | 4 | 5 | 11 | 53 |
| HUDSON | 9,528 | 190 | 2 | 4 | 1 | 1 | 1 | 2 | 1 | 5 | 25 |
| Ancram | 1,238 | 25 | ..... | 1 | ..... | ..... | ..... | ..... | 2 | ..... | ..... |
| Austerlitz | 974 | 19 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Canaan | 1,307 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Chatham | 3,537 | 74 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Claverack | 4,416 | 78 | ..... | 11 | ..... | ..... | ..... | 1 | 1 | 1 | 4 |
| Clermont | 812 | 6 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Copake | 1,277 | 20 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 3 |
| Gallatin | 823 | 12 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Germantown | 1,686 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ghent | 2,698 | 38 | | | | | | | | | 1 |
| Greenport | 1,191 | 17 | | | | | | | | | |
| Hillsdale | 1,380 | 20 | | | | | | | | | |
| Kinderhook | 3,333 | 66 | | 1 | | | | 1 | | | 6 |
| Livingston | 1,707 | 22 | | 1 | | | | | | | 3 |
| New Lebanon | 1,556 | 24 | | | | | | | 1 | | 4 |
| Stockport | 2,719 | 18 | 1 | | | | | | | | 1 |
| Stuyvesant | 2,125 | 25 | | | | | | | | 5 | |
| Taghkanick | 894 | 11 | | | | | | | | | 1 |
| **Cortland county** | 27,576 | 460 | 4 | 17 | | | 9 | | | 10 | 28 |
| Cincinnatus | 912 | 17 | | | | | | | | | |
| Cortlandville | 2,868 | 49 | | | | | | | | 1 | 1 |
| CORTLAND | 9,014 | 139 | 2 | 11 | | | 8 | | | 4 | 6 |
| Cuyler | 991 | 7 | | | | | | | | 1 | 1 |
| Freetown | 610 | 8 | | | | | | | | | |
| Harford | 753 | 9 | 1 | | | | | | | | 1 |
| Homer | 1,522 | 14 | | 1 | | | | | | | 1 |
| *Homer* | 2,381 | 35 | 1 | | | | 1 | | | 2 | 2 |
| Lapeer | 538 | 12 | | | | | | | | | 1 |
| Marathon | 1,664 | 23 | | 2 | | | | | | 1 | 2 |
| Preble | 857 | 18 | | | | | | | | | 1 |
| Scott | 852 | 8 | | | | | | | | | |
| Solon | 622 | 7 | | 1 | | | | | | | 4 |
| Taylor | 762 | 9 | | 1 | | | | | | | |
| Truxton | 1,217 | 19 | | 1 | | | | | | 1 | 1 |
| Virgil | 1,326 | 20 | | | | | | | | | 2 |
| Willett | 687 | 6 | | | | | | | | | |
| **Delaware county** | 46,418 | 597 | 1 | 9 | | 1 | 12 | 1 | 1 | 10 | 38 |
| Andes | 1,927 | 13 | 1 | | | | | | | | |
| Bovina | 932 | 14 | | | | | 1 | | | | |
| Colchester | 3,156 | 44 | | | | | 2 | | | | |
| Davenport | 1,620 | 19 | | 1 | | | | | | 1 | |
| Delhi | 3,243 | 48 | | 2 | | | | | | 1 | 5 |
| Deposit | 1,747 | 29 | | 1 | | | | | | | 2 |
| Franklin | 2,529 | 33 | | | | | | | | | 1 |
| Hamden | 1,378 | 6 | | | | | | | | | |
| Hancock | 5,308 | 23 | | | | | | | | 1 | |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Delaware county**—(*Continued*) | | | | | | | | | | | |
| Harpersfield | 1,221 | 14 | ..... | ..... | ..... | ..... | 3 | ..... | ..... | ..... | ..... |
| Kortright | 1,475 | 16 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| Masonville | 1,245 | 24 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 2 |
| Meredith | 1,508 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Middletown | 3,619 | 64 | ..... | ..... | ..... | ..... | 2 | ..... | 1 | 3 | 5 |
| Roxbury | 2,134 | 41 | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | 1 |
| Sidney | 4,023 | 68 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 11 |
| Stamford | 1,997 | 31 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | 1 | ..... |
| Tompkins | 2,482 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| Walton | 4,869 | 70 | ..... | 3 | ..... | ..... | ..... | 1 | ..... | 1 | 4 |
| **Dutchess county** | 81,670 | 1,284 | 1 | 17 | 6 | 7 | 1 | 3 | 24 | 31 | 120 |
| POUGHKEEPSIE | 24,029 | 426 | ..... | 10 | 1 | 3 | ..... | 2 | 14 | 8 | 42 |
| Amenia | 2,374 | 42 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 7 |
| Beekman | 1,071 | 12 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Clinton | 1,370 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Dover | 1,959 | 33 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 3 |
| East Fishkill | 1,970 | 31 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 2 |
| Fishkill | 13,016 | 200 | ..... | 1 | 4 | 1 | 1 | ..... | 2 | 5 | 36 |
| Hyde Park | 2,806 | 39 | ..... | ..... | ..... | 2 | ..... | ..... | 4 | 1 | 2 |
| La Grange | 1,304 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Milan | 950 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... |
| North East | 2,047 | 26 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Pawling | 1,921 | 34 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 1 |
| Pine Plains | 1,263 | 17 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... |
| Pleasant Valley | 1,483 | 38 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 1 |
| Poughkeepsie | 5,943 | 50 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 4 |
| Red Hook | 3,895 | 57 | ..... | 1 | ..... | 1 | ..... | ..... | 2 | 3 | 3 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rhinebeck | 3,472 | 52 | | | | | | | | 4 | [illegible] |
| Stanford | 1,624 | 27 | | 1 | | | | 1 | | | 1 |
| Union Vale | 945 | 18 | | | | | | | | | 2 |
| Wappingers | 1,692 | 26 | | | | | | | | 1 | 1 |
| *Wappingers Falls* | 3,504 | 50 | | 1 | 1 | | | | | 1 | 6 |
| Washington | 3,032 | 67 | | 2 | | | | | | 2 | 5 |
| **Erie county** | **423,686** | **6,387** | **45** | **106** | **2** | **46** | **23** | **75** | **153** | **485** | **530** |
| BUFFALO | 352,387 | 5,360 | 38 | 98 | 1 | 45 | 22 | 64 | 143 | 458 | 476 |
| *Tonawanda* | 7,421 | 106 | 1 | 1 | 1 | 1 | | | | 5 | 8 |
| Alden | 2,396 | 36 | 3 | | | | | | 1 | 1 | 1 |
| Amherst | 4,223 | 46 | | 1 | | | | | | 2 | 5 |
| Aurora | 4,015 | 46 | | | | | | | | | 1 |
| Boston | 1,398 | 22 | | | | | | | 2 | 1 | |
| Brant | 2,005 | 17 | | | | | | 2 | 1 | | |
| Cheektowaga | 5,156 | 47 | | | | | | 1 | 1 | 1 | 2 |
| Clarence | 2,948 | 35 | | 1 | | | | | | 1 | |
| Colden | 1,260 | 14 | 2 | | | | | | | | |
| Collins | 3,753 | 68 | | 1 | | | | | | 1 | 5 |
| Concord | 4,086 | 52 | | 1 | | | | | | 1 | 2 |
| East Hamburgh | 2,350 | 33 | | | | | | | | 1 | 4 |
| Eden | 2,368 | 34 | | | | | | 1 | | | 3 |
| Elma | 2,202 | 32 | | | | | | | | 2 | 6 |
| Evans | 2,795 | 35 | | | | | | | 2 | | 1 |
| Grand Island | 1,036 | 21 | | | | | | | | | |
| Hamburgh | 4,673 | 69 | | | | | | 1 | 1 | 4 | 1 |
| Holland | 1,434 | 30 | | 1 | | | | | | | 1 |
| Lancaster | 8,757 | 110 | 1 | 2 | | | 1 | 1 | | 4 | 5 |
| Marilla | 1,441 | 12 | | | | | | | 1 | | |
| Newstead | 3,844 | 38 | | | | | | | | | 4 |
| North Collins | 2,362 | 29 | | | | | | 3 | | | 1 |
| Sardinia | 1,548 | 23 | | | | | | | 1 | | 1 |
| Tonawanda | 1,205 | | | | | | | | | | |
| Wales | 1,220 | 20 | | | | | | | | | 1 |
| West Seneca | 5,363 | 52 | | | | | | 2 | | 3 | 2 |
| **Essex county** | **30,707** | **414** | **1** | **4** | | **1** | **2** | **1** | **2** | **9** | **18** |
| Chesterfield | 2,362 | 48 | | | | | | | | | 2 |
| Crown Point | 2,112 | 24 | | | | | | | | 1 | 2 |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diptheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Essex county**—(*Continued*) | | | | | | | | | | | |
| Elizabethtown | 1,131 | 17 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Essex | 1,333 | 35 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Jay | 1,744 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Keene | 1,394 | 17 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lewis | 1,123 | 12 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Minerva | 1,052 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Moriah | 4,447 | 77 | ..... | 1 | ..... | 1 | ..... | ..... | 1 | 1 | ..... |
| Newcomb | 507 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| North Elba | 1,670 | 26 | ..... | 2 | ..... | ..... | ..... | 1 | ..... | ..... | 1 |
| North Hudson | 544 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| St. Armand | 739 | 18 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 2 | 5 |
| Schroon | 1,272 | 20 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 1 |
| Ticonderoga | 5,048 | 50 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 | 1 |
| Westport | 1,727 | 19 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 3 | ..... |
| Willsborough | 1,522 | 12 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Wilmington | 634 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| **Franklin county** | 42,858 | 688 | 2 | 5 | ..... | 1 | ..... | 4 | 22 | 22 | 93 |
| Altamont | 3,045 | 52 | ..... | 1 | ..... | ..... | ..... | ..... | 1 | 1 | 7 |
| Bangor | 2,221 | 19 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Belmont | 2,414 | 23 | ..... | ..... | ..... | ..... | ..... | ..... | 3 | ..... | 1 |
| Bombay | 2,742 | 36 | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... | 6 |
| Brandon | 938 | 14 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 1 | 2 |
| Brighton | 706 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 5 |
| Burke | 1,936 | 28 | 1 | ..... | ..... | ..... | ..... | 1 | 1 | 1 | 3 |
| Chateaugay | 2,723 | 28 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 1 |
| Constable | 1,266 | 24 | ..... | ..... | ..... | ..... | ..... | 1 | 1 | 1 | 3 |
| Dickinson | 1,691 | 25 | ..... | 1 | ..... | ..... | ..... | ..... | 1 | ..... | ..... |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fort Covington | 2,043 | 50 | 1 | | | | | 1 | 3 | 1 | 4 |
| Franklin | 1,501 | 18 | | | | | | | | | 3 |
| Harrietstown | 1,142 | 62 | | 1 | | | | 1 | | 3 | 23 |
| *Malone* | 5,935 | 85 | | 1 | | | | | 2 | 3 | 15 |
| Malone | 4,074 | 81 | | 1 | | | | | 3 | 5 | 3 |
| Moira | 2,484 | 35 | | | | | | | 1 | | 1 |
| Santa Clara | 580 | 6 | | | | | | | | 1 | |
| *Saranac Lake* | 2,594 | 23 | | | | | | | | 2 | 10 |
| Waverly | 1,615 | 31 | | | | | | | 2 | 3 | 2 |
| Westville | 1,237 | 20 | | | | | | | | | 3 |
| **Fulton county** | **42,842** | **604** | **4** | **2** | | | **4** | **4** | **8** | **16** | **47** |
| GLOVERSVILLE | 18,349 | 263 | 3 | 1 | | | 1 | 4 | 1 | 9 | 28 |
| Bleecker | 603 | 13 | | | | | 1 | | 1 | | 1 |
| Broadalbin | 1,946 | 33 | | | | | | | | | 1 |
| Caroga | 470 | 16 | | | | | | | | | |
| Ephratah | 1,566 | 27 | | | | | 2 | | | | 1 |
| JOHNSTOWN | 10,130 | 117 | | | | | | | 1 | 4 | 8 |
| Johnstown | 2,661 | 36 | 1 | | | | | | | 1 | 4 |
| Mayfield | 2,136 | 27 | | | | | | | | 2 | 2 |
| Northampton | 2,226 | 45 | | | | | | | | | 2 |
| Oppenheim | 1,258 | 13 | | | | | | | | | |
| Perth | 667 | 9 | | | | | | | | | |
| Stratford | 830 | 5 | | 1 | | | | | | | |
| **Genesee county** | **34,561** | **503** | **1** | **9** | | **2** | **2** | **7** | **8** | **5** | **33** |
| Alabama | 1,957 | 21 | | | | | | | | | 1 |
| Alexander | 1,503 | 20 | | | | | | | | 1 | |
| *Batavia* | 9,180 | 138 | | 3 | | | 1 | 6 | | 2 | 21 |
| Batavia | 2,250 | 28 | | | | | | | | | 1 |
| Bergen | 1,669 | 29 | | 1 | | | | | | | 1 |
| Bethany | 1,512 | 19 | | 1 | | | | | | | 1 |
| Byron | 1,330 | 15 | | | | | | 1 | | | |
| Darien | 1,887 | 30 | | | | | | | | | |
| Elba | 1,526 | 28 | | | | | | | | | 2 |
| *Le Roy* | 3,144 | 67 | 1 | 2 | | 1 | 1 | | 1 | | 3 |
| Le Roy | 1,679 | 16 | | | | 1 | | | 1 | | 1 |
| Oakfield | 1,589 | 22 | | | | | | | 1 | 2 | |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Genesee county**—(*Continued*) | | | | | | | | | | | |
| Pavilion | 1,542 | 24 | | | | | | | | | 1 |
| Pembroke | 2,425 | 36 | | 2 | | | | | | | |
| Stafford | 1,338 | 10 | | | | | | | | | 1 |
| **Greene county** | 31,478 | 512 | 3 | 11 | | 3 | 6 | | 6 | 14 | 33 |
| Ashland | 692 | 8 | | | | | | | | | |
| Athens | 2,891 | 45 | | | | | 1 | | | 3 | 2 |
| Cairo | 2,176 | 42 | | | | | | | | | 4 |
| Catskill | 3,082 | 38 | | | | | 1 | | | 1 | 3 |
| *Catskill* | 5,484 | 119 | 2 | 5 | | 2 | 1 | | 6 | 4 | 10 |
| Coxsackie | 4,102 | 68 | 1 | 4 | | | 3 | | | 4 | 3 |
| Durham | 1,636 | 21 | | | | | | | | | 1 |
| Greenville | 1,651 | 25 | | | | | | | | | 2 |
| Halcott | 350 | 2 | | | | | | | | 1 | |
| Hunter | 2,788 | 33 | | | | 1 | | | | | 1 |
| Jewett | 1,028 | 10 | | | | | | | | | |
| Lexington | 1,153 | 12 | | | | | | | | | 1 |
| New Baltimore | 2,283 | 51 | | 1 | | | | | | 1 | 2 |
| Prattsville | 775 | 10 | | | | | | | | | |
| Windham | 1,387 | 25 | | 1 | | | | | | | 4 |
| **Hamilton county** | 4,947 | 46 | | 1 | | | | | | | 5 |
| Arietta | 247 | 1 | | | | | | | | | |
| Benson | 299 | 2 | | | | | | | | | |
| Hope | 463 | 6 | | | | | | | | | 1 |
| Indian Lake | 1,219 | 12 | | 1 | | | | | | | 2 |
| Lake Pleasant | 469 | 3 | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Wells | [illegible] | [illegible] | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| **Herkimer county** | **51,049** | **676** | **3** | **7** | **1** | **3** | **5** | **4** | **22** | **17** | **56** |
| Columbia | 1,268 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | 3 | 1 | 2 |
| Danube | 1,043 | 11 | ..... | ..... | ..... | 1 | ..... | ..... | 1 | 1 | ..... |
| Fairfield | 1,390 | 19 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Frankfort | 4,472 | 51 | ..... | 1 | ..... | ..... | 2 | 2 | ..... | 1 | 3 |
| German Flats | 3,525 | 66 | ..... | ..... | ..... | ..... | 1 | ..... | 1 | 1 | 10 |
| *Ilion* | 5,138 | 64 | 1 | 1 | ..... | ..... | 1 | 1 | 1 | 4 | 8 |
| *Herkimer* | 5,555 | 86 | ..... | 1 | ..... | ..... | ..... | ..... | 6 | ..... | 10 |
| Herkimer | 1,193 | 19 | ..... | ..... | ..... | ..... | ..... | 1 | 1 | ..... | 1 |
| Litchfield | 931 | 15 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| LITTLE FALLS | 10,381 | 130 | 1 | 3 | 1 | 2 | ..... | ..... | 8 | 6 | 9 |
| Little Falls | 718 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Manheim | 2,648 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 | 1 |
| Newport | 1,613 | 22 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Norway | 680 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Ohio | 660 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Russia | 2,025 | 22 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Salisbury | 1,426 | 19 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Schuyler | 1,365 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Stark | 1,030 | 19 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Warren | 1,240 | 17 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Webb | 920 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Wilmurt | 353 | 5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Winfield | 1,475 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 3 |
| **Jefferson county** | **76,748** | **1,092** | **1** | **15** | ..... | **1** | **22** | **1** | **3** | **26** | **81** |
| WATERTOWN | 21,696 | 347 | ..... | 8 | ..... | ..... | 11 | 1 | 2 | 16 | 30 |
| Adams | 3,081 | 65 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 2 |
| Alexandria | 3,894 | 45 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3 |
| Antwerp | 3,008 | 43 | ..... | 1 | ..... | ..... | 2 | ..... | ..... | 1 | 3 |
| Brownville | 3,698 | 45 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 2 |
| Cape Vincent | 2,882 | 49 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 | 5 |
| Champion | 2,525 | 33 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 3 | 1 |
| Clayton | 4,313 | 59 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... | 6 |
| Ellisburgh | 3,888 | 81 | 1 | 1 | ..... | ..... | 2 | ..... | ..... | ..... | 7 |
| Henderson | 1,615 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jefferson county**—(*Continued*) | | | | | | | | | | | |
| Hounsfield | 2,772 | 25 | | | | | | | | | 2 |
| Le Ray | 2,576 | 30 | | 1 | | | | | | | 2 |
| Lorraine | 1,019 | 8 | | | | | 1 | | | | |
| Lyme | 2,200 | 19 | | | | | | | | | 1 |
| Orleans | 2,367 | 36 | | | | | 1 | | | | 1 |
| Pamelia | 1,031 | 20 | | | | | | | | | 2 |
| Philadelphia | 1,750 | 19 | | | | | | | | | 1 |
| Rodman | 1,212 | 17 | | | | | | | | | 1 |
| Rutland | 1,885 | 20 | | | | | 1 | | | | 1 |
| Theresa | 2,130 | 22 | | | | | | | | | 4 |
| Watertown | 1,159 | 19 | | | | | | | | | 1 |
| Wilna | 5,172 | 57 | | 3 | | | | | 1 | 3 | 4 |
| Worth | 875 | 13 | | | | | | | | 1 | 1 |
| **Kings county** * | | | | | | | | | | | |
| **Lewis county** | 27,427 | 376 | 4 | 4 | | | 3 | 1 | 2 | 5 | 24 |
| Croghan | 3,159 | 29 | 1 | 1 | | | | 1 | | 1 | |
| Denmark | 2,193 | 38 | | | | | 1 | | | 1 | |
| Diana | 2,083 | 18 | | | | | | | | | |
| Greig | 1,100 | 17 | | | | | | | | 1 | 2 |
| Harrisburg | 770 | 7 | | | | | | | | | 1 |
| High Market | 593 | 11 | | | | | | | | | 2 |
| Lewis | 917 | 14 | | 1 | | | | | | | |
| Leyden | 1,629 | 19 | | 1 | | | | | | | 2 |
| Lowville | 3,746 | 73 | | | | | 1 | | 1 | 1 | 7 |
| Lyonsdale | 1,371 | 76 | 1 | | | | | | 1 | | 1 |
| Martinsburgh | 1,845 | 15 | | | | | | | | | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Osceola | [illegible] | [illegible] | | | | | | | | | |
| Pinckney | 934 | 16 | 1 | | | | | | | | |
| Turin | 1,157 | 15 | | | | | | | | | 2 |
| Watson | 981 | 8 | | | | | 1 | | | | 1 |
| West Turin | 1,779 | 29 | | | | | | | | 1 | 4 |
| **Livingston county** | **37,059** | **483** | | **6** | | **1** | **2** | **5** | **1** | **4** | **32** |
| Avon | 3,071 | 37 | | | | | | 1 | | | 2 |
| Caledonia | 2,072 | 19 | | 1 | | | | | | | 2 |
| Conesus | 1,149 | 16 | | 2 | | | | | | | |
| Geneseo | 3,613 | 49 | | | | | | | | 1 | 3 |
| Groveland | 1,949 | 37 | | | | | | | | 1 | 6 |
| Leicester | 1,415 | 12 | | | | | | | | | |
| Lima | 2,279 | 33 | | | | | | | | | 3 |
| Livonia | 2,788 | 35 | | 1 | | | | | | | 2 |
| Mt. Morris | 3,715 | 47 | | | | | | | | | 4 |
| North Dansville | 328 | | | | | | | | | | |
| *Dansville* | 3,633 | 58 | | | | 1 | | 2 | | | 4 |
| Nunda | 2,397 | 48 | | | | | | 1 | | 2 | 2 |
| Ossian | 780 | 7 | | | | | | | 1 | | |
| Portage | 1,029 | 14 | | | | | | 1 | | | |
| Sparta | 1,189 | 4 | | | | | | | | | |
| Springwater | 2,016 | 21 | | | | | 1 | | | | |
| West Sparta | 906 | 10 | | 1 | | | 1 | | | | 2 |
| York | 2,730 | 36 | | 1 | | | | | | | 2 |
| **Madison county** | **40,545** | **613** | **2** | **8** | | **1** | **3** | **2** | **4** | **9** | **42** |
| Brookfield | 2,726 | 43 | 1 | 2 | | | 1 | 1 | | | 1 |
| Cazenovia | 3,830 | 64 | | | | | | | | | 2 |
| De Ruyter | 1,410 | 24 | | 1 | | | | | | | |
| Eaton | 2,705 | 52 | | | | | | | | | 6 |
| Fenner | 911 | 8 | | | | | | | | | |
| Georgetown | 998 | 7 | | | | | | | | | |
| Hamilton | 3,744 | 75 | 1 | | | 1 | 1 | 1 | | 2 | 3 |
| Lebanon | 1,243 | 14 | | | | | | | | | |
| Lenox | 4,679 | 70 | | | | | | | 1 | 2 | 6 |

*See the City of New York.

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Madison county**—(*Continued*) | | | | | | | | | | | |
| Lincoln | 1,052 | 11 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| *Oneida* | 6,364 | 111 | ..... | 2 | ..... | ..... | ..... | ..... | 3 | 3 | 14 |
| Oneida | 1,174 | 3 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Madison | 2,024 | 31 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | 3 |
| Nelson | 1,296 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Smithfield | 989 | 9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Stockbridge | 1,622 | 20 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Sullivan | 3,778 | 44 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 4 |
| **Monroe county** | **217,854** | **3,130** | **18** | **43** | **1** | **3** | **18** | **14** | **25** | **127** | **300** |
| ROCHESTER | 162,608 | 2,387 | 18 | 32 | 1 | 3 | 14 | 7 | 21 | 103 | 256 |
| Brighton | 3,815 | 32 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 2 | 1 |
| Chili | 2,099 | 16 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 2 |
| Clarkson | 1,581 | 30 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Gates | 3,468 | 32 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Greece | 5,579 | 83 | ..... | 1 | ..... | ..... | ..... | 1 | 1 | 7 | 7 |
| Hamlin | 2,188 | 20 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Henrietta | 2,062 | 26 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 |
| Irondequoit | 2,863 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Mendon | 2,760 | 54 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3 |
| Ogden | 2,616 | 46 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| Parma | 2,814 | 54 | ..... | ..... | ..... | ..... | ..... | 2 | 2 | ..... | ..... |
| Penfield | 2,857 | 38 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 4 |
| Perinton | 4,703 | 79 | ..... | 1 | ..... | ..... | ..... | 1 | ..... | 9 | 2 |
| Pittsford | 2,373 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Riga | 1,864 | 22 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Rush | 1,491 | 17 | ..... | 1 | ..... | ..... | 1 | ..... | ..... | ..... | 1 |
| Sweden | 1,345 | 23 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Montgomery county** | 47,468 | 628 | 1 | 18 | ..... | ..... | 4 | ..... | 7 | 20 | 37 |
| AMSTERDAM | 20,929 | 327 | 1 | 5 | ..... | ..... | 2 | ..... | 5 | 15 | 23 |
| Amsterdam | 3,202 | 28 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Canajoharie | 3,888 | 52 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | 1 | 8 |
| Charleston | 1,052 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Florida | 1,988 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Glen | 2,281 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 1 | 1 |
| Minden | 2,097 | 27 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| *Fort Plain* | 2,444 | 28 | ..... | 2 | ..... | ..... | 1 | ..... | ..... | ..... | 2 |
| Mohawk | 2,711 | 43 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Palatine | 2,569 | 23 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Root | 1,653 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| St. Johnsville | 2,674 | 33 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 | ..... |
| **Nassau county** | 55,448 | 847 | 2 | 5 | 2 | 4 | 10 | 4 | 11 | 58 | 73 |
| Hempstead | 27,066 | 359 | 2 | 3 | 1 | 2 | 2 | 2 | 6 | 24 | 26 |
| North Hempstead | 12,048 | 214 | ..... | 1 | 1 | ..... | 8 | 1 | 4 | 11 | 20 |
| Oyster Bay | 16,334 | 274 | ..... | 1 | ..... | 2 | ..... | 1 | 1 | 18 | 27 |
| **New York, City of** | 3,437,202 | 70,722 | 240 | 727 | 196 | 1,162 | 444 | 292 | 2,067 | 6,774 | 8,141 |
| Borough of Manhattan | 1,850,093 | 38,510 | 158 | 380 | 51 | 560 | 221 | 152 | 1,116 | 3,335 | 4,094 |
| Borough of Bronx | 200,507 | 4,796 | 28 | 32 | 44 | 75 | 46 | 9 | 110 | 273 | 1,138 |
| Borough of Brooklyn | 1,166,582 | 23,271 | 52 | 272 | 66 | 495 | 162 | 111 | 732 | 2,701 | 2,480 |
| Borough of Queens | 152,999 | 2,800 | 2 | 27 | 31 | 23 | 4 | 16 | 70 | 306 | 294 |
| Borough of Richmond | 67,021 | 1,345 | ..... | 16 | 4 | 9 | 11 | 4 | 39 | 159 | 135 |
| **Niagara county** | 74,961 | 1,079 | 4 | 55 | ..... | 4 | 1 | 7 | 18 | 60 | 90 |
| LOCKPORT | 16,581 | 284 | 1 | 12 | ..... | ..... | 1 | 1 | 7 | 20 | 34 |
| NIAGARA FALLS | 19,457 | 329 | 3 | 30 | ..... | 1 | ..... | 2 | 6 | 19 | 32 |
| Cambria | 1,880 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hartland | 2,728 | 34 | ..... | ..... | ..... | ..... | ..... | 1 | 1 | ..... | 1 |
| Lewiston | 3,221 | 59 | ..... | 4 | ..... | ..... | ..... | ..... | 1 | 3 | 4 |
| Lockport | 2,585 | 26 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Newfane | 3,248 | 45 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 3 | 3 |
| Niagara | 1,066 | 11 | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | ..... |
| Pendleton | 1,364 | 26 | ..... | 1 | ..... | ..... | ..... | 2 | ..... | 2 | 2 |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Niagara county**—(*Continued*) | | | | | | | | | | | |
| Porter | 2,235 | 23 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 1 |
| Royalton | 4,797 | 44 | ..... | ..... | ..... | ..... | ..... | 1 | 1 | 2 | 1 |
| Somerset | 1,923 | 16 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Wheatfield | 1,926 | 32 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | 2 | 2 |
| NORTH TONAWANDA | 9,069 | 102 | ..... | 3 | ..... | 1 | ..... | ..... | 1 | 7 | 6 |
| Wilson | 2,881 | 30 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | 3 |
| **Oneida county** | 132,800 | 2,123 | 7 | 19 | 1 | 5 | 11 | 19 | 34 | 63 | 189 |
| UTICA | 56,383 | 1,031 | 1 | 9 | ..... | 2 | 5 | 14 | 26 | 42 | 116 |
| ROME | 15,243 | 277 | 2 | 2 | ..... | 2 | ..... | ..... | 5 | 9 | 25 |
| Annsville | 1,744 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Augusta | 2,029 | 21 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Ava | 706 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Boonville | 3,332 | 53 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 7 |
| Bridgewater | 931 | 16 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Camden | 3,745 | 52 | 1 | 3 | ..... | ..... | ..... | ..... | ..... | 2 | 2 |
| Deerfield | 1,756 | 40 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 1 | 1 |
| Florence | 1,207 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Floyd | 785 | 11 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Forestport | 1,562 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Kirkland | 4,545 | 51 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | 5 |
| Lee | 1,571 | 40 | ..... | ..... | ..... | ..... | 1 | 1 | ..... | 1 | 2 |
| Marcy | 1,398 | 12 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Marshall | 1,566 | 18 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 1 | ..... |
| New Hartford | 5,230 | 55 | ..... | ..... | ..... | ..... | ..... | 1 | 2 | 1 | 4 |
| Paris | 2,626 | 43 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Remsen | 1,208 | 30 | ..... | ..... | ..... | ..... | 2 | ..... | 1 | ..... | 3 |
| Sangerfield | 1,107 | 33 | ..... | 1 | ..... | ..... | 1 | ..... | ..... | 1 | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waterville | 1,571 | 1 | | | | | | | | | 1 |
| Western | 1,621 | 26 | | | | | 1 | | | | |
| Westmoreland | 2,192 | 22 | | 1 | | | | | | | 2 |
| Whitestown | 6,235 | 81 | 1 | 2 | 1 | | | | | 4 | 10 |
| **Onondaga county** | **168,785** | **2,352** | **8** | **33** | | **8** | **5** | **10** | **34** | **82** | **227** |
| SYRACUSE | 108,374 | 1,541 | 6 | 20 | | 5 | 1 | 8 | 26 | 73 | 177 |
| Camillus | 2,543 | 43 | 1 | | | | 1 | | 6 | 1 | 1 |
| Cicero | 2,611 | 34 | | 1 | | | | | | | 4 |
| Clay | 2,578 | 28 | | 1 | | | | | | | 1 |
| Dewitt | 5,435 | 57 | | 2 | | | | | | 2 | 10 |
| Elbridge | 3,327 | 39 | | | | 1 | | | | 1 | 1 |
| Fabius | 1,686 | 27 | | 1 | | | | | | | |
| Geddes | 4,387 | 51 | | 1 | | 1 | | | | | 2 |
| La Fayette | 1,892 | 15 | | | | | 1 | | | | |
| Lysander | 3,026 | 38 | | | | | | | | | 5 |
| *Baldwinsville* | 2,992 | 47 | | | | | | | 1 | 2 | 6 |
| Manlius | 5,374 | 77 | | 3 | | | 2 | | | 1 | 4 |
| Marcellus | 2,581 | 37 | 1 | 1 | | | | | | | 1 |
| Onondaga | 5,580 | 102 | | 1 | | 1 | | | | | 9 |
| Otisco | 1,202 | 23 | | 1 | | | | | | 1 | 1 |
| Pompey | 2,546 | 45 | | | | | | | | | |
| Salina | 3,745 | 52 | | | | | | | | 1 | 1 |
| Skaneateles | 4,205 | 63 | | | | | | 2 | 1 | | 2 |
| Spafford | 1,159 | 11 | | 1 | | | | | | | |
| Tully | 1,465 | 9 | | | | | | | | | |
| Van Buren | 2,117 | 13 | | | | | | | | | 2 |
| **Ontario county** | **49,605** | **717** | **2** | **11** | **1** | | **8** | **6** | | **17** | **42** |
| Bristol | 1,310 | 22 | | | | | | | | | 3 |
| Canadice | 674 | 14 | | | | | | | | | 1 |
| Canandaigua | 2,133 | 31 | | | | | 1 | | | | 1 |
| *Canandaigua* | 6,151 | 102 | | 2 | 1 | | 1 | | | 3 | 6 |
| East Bloomfield | 1,940 | 28 | 1 | | | | | | | | 1 |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial Disease | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Ontario county**—(*Continued*) | | | | | | | | | | | |
| Farmington | 1,607 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Geneva | 1,091 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| GENEVA | 10,433 | 176 | ..... | 5 | ..... | ..... | 4 | 4 | ..... | 7 | 12 |
| Gorham | 2,131 | 29 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| Hopewell | 1,550 | 34 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Manchester | 4,733 | 70 | 1 | 2 | ..... | ..... | ..... | ..... | ..... | 1 | 7 |
| Naples | 2,370 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Phelps | 4,788 | 62 | ..... | 1 | ..... | ..... | 1 | ..... | ..... | 2 | 3 |
| Richmond | 1,381 | 17 | ..... | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Seneca | 2,654 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| South Bristol | 1,104 | 7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Victor | 2,249 | 26 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 1 |
| West Bloomfield | 1,306 | 11 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| **Orange county** | 108,859 | 1,646 | 8 | 20 | 6 | 8 | ..... | 2 | 31 | 94 | 146 |
| NEWBURGH | 24,943 | 442 | 5 | 6 | 1 | 7 | ..... | ..... | 12 | 36 | 40 |
| MIDDLETOWN | 14,522 | 228 | ..... | 2 | 3 | ..... | ..... | ..... | 2 | 14 | 23 |
| Blooming Grove | 2,188 | 26 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Chester | 2,186 | 36 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 3 |
| Cornwall | 4,258 | 89 | ..... | 1 | ..... | ..... | ..... | ..... | 1 | 5 | 8 |
| Crawford | 1,778 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Deerpark | 1,932 | 20 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| *Port Jervis* | 9,385 | 164 | ..... | 3 | 1 | ..... | ..... | ..... | 3 | 4 | 24 |
| Goshen | 4,564 | 96 | ..... | ..... | 1 | ..... | ..... | ..... | 3 | 6 | 9 |
| Greenville | 800 | 11 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hamptonburgh | 1,072 | 27 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 2 | 1 |
| Highlands | 4,519 | 67 | ..... | 1 | ..... | ..... | ..... | 2 | ..... | 4 | 4 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Minisink** | 1,505 | 21 | 1 | | | | | | 1 | 1 | 1 |
| **Monroe** | 1,784 | 29 | | 1 | | | | | 1 | 1 | 1 |
| **Montgomery** | 5,939 | 99 | 2 | 1 | | | | | 3 | 6 | 6 |
| **Mount Hope** | 1,236 | 14 | | 1 | | | | | | | |
| **Newburgh** | 4,246 | 36 | | | | | | | | | 1 |
| **New Windsor** | 2,392 | 34 | | 1 | | | | | 1 | 2 | 7 |
| **Tuxedo** | 2,277 | 26 | | | | | | | | 1 | |
| **Walkill** | 2,725 | 19 | | | | | | | | | 2 |
| **Warwick** | 6,403 | 86 | | 1 | | | | | 4 | 7 | 10 |
| **Wawayanda** | 1,539 | 18 | | | | | | | | | 2 |
| **Woodbury** | 1,666 | 34 | | | | | | | | 2 | 2 |
| **Orleans county** | 30,164 | 419 | | 6 | | | 6 | 10 | 2 | 8 | 32 |
| ***Albion*** | 4,447 | 85 | | 2 | | | | 8 | | 3 | 6 |
| **Albion** | 1,398 | 36 | | | | | | | | | 3 |
| **Barre** | 1,937 | 23 | | | | | | | | | 1 |
| **Carlton** | 2,338 | 33 | | 1 | | | | | | | 2 |
| **Clarendon** | 1,518 | 18 | | | | | | | | | 1 |
| **Gaines** | 1,763 | 21 | | | | | | | | | 2 |
| **Kendall** | 1,616 | 15 | | | | | 1 | 1 | | | 1 |
| **Murray** | 3,656 | 44 | | 1 | | | 2 | | | 1 | 6 |
| **Ridgeway** | 2,753 | 35 | | | | | | | 1 | | 1 |
| ***Medina*** | 4,716 | 69 | | 2 | | | 3 | 1 | 1 | 3 | 7 |
| **Shelby** | 2,108 | 25 | | | | | | | | 1 | 2 |
| **Yates** | 1,884 | 15 | | | | | | | | | |
| **Oswego county** | 70,881 | 1,068 | 4 | 18 | | | | 8 | 16 | 30 | 80 |
| **OSWEGO** | 22,199 | 334 | 2 | 5 | | | | 6 | | 19 | 35 |
| **Albion** | 1,724 | 26 | | 1 | | | | 1 | | 1 | 3 |
| **Amboy** | 824 | 17 | | | | | | | | | |
| **Boylston** | 849 | 20 | | 1 | | | | | | | 2 |
| **Constantia** | 2,259 | 19 | | | | | | | | | 4 |
| **Granby** | 5,120 | 96 | | | | | | | 8 | | 4 |
| **Hannibal** | 2,473 | 37 | | 1 | | | | | | | 2 |
| **Hastings** | 2,303 | 40 | | 1 | | | | | | | 2 |
| **Mexico** | 3,091 | 43 | | | | | | | | | 4 |
| **New Haven** | 1,408 | 26 | | | | | | | | | 2 |
| **Orwell** | 1,149 | 12 | | | | | | | | | 3 |
| **Oswego** | 2,737 | 44 | 1 | | | | | | | 1 | |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Oswego county**—(*Continued*) | | | | | | | | | | | |
| Palermo | 1,407 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Parish | 1,530 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Redfield | 911 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Richland | 3,535 | 63 | 1 | 1 | ..... | ..... | ..... | 1 | ..... | ..... | 2 |
| Sandy Creek | 2,232 | 36 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 1 |
| Schroeppel | 3,012 | 50 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 | 4 |
| Scriba | 2,480 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Volney | 2,393 | 34 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| *Fulton* | 5,281 | 88 | ..... | 2 | ..... | ..... | ..... | ..... | 7 | 2 | 6 |
| West Monroe | 936 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Williamstown | 1,028 | 14 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| **Otsego county** | 48,939 | 765 | 2 | 7 | 1 | 4 | 21 | 2 | 7 | 10 | 39 |
| Burlington | 1,263 | 15 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| Butternuts | 1,698 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4 |
| Cherry Valley | 1,802 | 7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Decatur | 559 | 14 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Edmeston | 1,767 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Exeter | 1,087 | 16 | ..... | ..... | ..... | ..... | ..... | ..... | 3 | ..... | ..... |
| Hartwick | 1,800 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... |
| Laurens | 1,483 | 28 | ..... | ..... | ..... | ..... | 2 | 1 | ..... | ..... | ..... |
| Maryland | 1,998 | 28 | 1 | ..... | ..... | ..... | 1 | ..... | 1 | ..... | 1 |
| Middlefield | 2,058 | 44 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3 |
| Milford | 2,007 | 33 | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 2 | 1 |
| Morris | 1,689 | 28 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... | 1 |
| New Lisbon | 1,225 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Oneonta | 1,763 | 42 | ..... | 1 | ..... | 1 | ..... | 1 | ..... | 1 | 2 |
| *Oneonta* | 7,147 | 112 | ..... | 1 | ..... | 2 | 3 | ..... | 1 | 3 | 5 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Otego | 1,817 | 31 | 1 | | | 1 | 3 | | | | 1 |
| Otsego | 1,171 | 31 | | 1 | | | 2 | | | | 1 |
| *Cooperstown* | 2,368 | 35 | | 2 | | | 1 | | | 1 | 3 |
| Pittsfield | 1,101 | 22 | | | | | | | | | 3 |
| Plainfield | 897 | 13 | | 1 | | | | | | | 1 |
| Richfield | 2,526 | 40 | | | | | | | | | 1 |
| Roseboom | 1,031 | 17 | | | | | | | | | 1 |
| Springfield | 1,762 | 24 | | | | | | | | | |
| Unadilla | 2,601 | 31 | | | | | | | | 2 | 3 |
| Westford | 910 | 8 | | | | | | | | | |
| Worcester | 2,409 | 59 | | 1 | | | 5 | | 1 | 1 | 6 |
| **Putnam county** | **13,787** | **207** | | **1** | **1** | | **2** | | **8** | **2** | **14** |
| Carmel | 2,598 | 38 | | | | | 1 | | | | 1 |
| Kent | 1,026 | 14 | | 1 | | | | | | | 1 |
| Patterson | 1,644 | 28 | | | | | 1 | | | | 2 |
| Phillipstown | 4,642 | 81 | | | | | | | 2 | 2 | 5 |
| Putnam Valley | 1,034 | 16 | | | | | | | | | 2 |
| South East | 2,843 | 30 | | | 1 | | | | 1 | | 3 |
| **Rensselaer county** | **121,697** | **2,895** | **12** | **68** | | **6** | **32** | **17** | **36** | **85** | **299** |
| TROY | 60,651 | 1,662 | 9 | 42 | | 6 | 22 | 14 | 23 | 73 | 247 |
| Berlin | 1,677 | 24 | | | | | | | | | 3 |
| Brunswick | 3,513 | 44 | | | | | 1 | | | | 1 |
| East Greenbush | 2,036 | 46 | | 1 | | | | | | | 4 |
| Grafton | 1,136 | 12 | | 2 | | | 1 | | | | |
| RENSSELAER | 7,466 | 128 | 3 | 5 | | | | 1 | 7 | 6 | 9 |
| Hoosick | 2,960 | 33 | | 1 | | | 1 | | 3 | | 4 |
| *Hoosick Falls* | 5,671 | 93 | | 1 | | | 2 | | 2 | 1 | 16 |
| Lansingburgh | 344 | | | | | | | | | | |
| Nassau | 2,073 | 30 | | 1 | | | 1 | | | | 1 |
| North Greenbush | 4,719 | 65 | 1 | 3 | | | 3 | | | | 4 |
| Petersburgh | 1,449 | 17 | | | | | | | 1 | | |
| Pittstown | 3,236 | 46 | | 2 | | | 1 | | | | 3 |
| Poestenkill | 1,362 | 19 | | 2 | | | | 1 | | 1 | 2 |
| Sand Lake | 2,299 | 31 | | 2 | | | | | | 4 | |
| Schaghticoke | 2,631 | 42 | | | | | | | | | |
| Schodack | 4,334 | 71 | | 1 | | | | 1 | | | 2 |
| Stephentown | 1,545 | 32 | | | | | | | | | |

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Richmond county*** | | | | | | | | | | | |
| **Rockland county** | 88,298 | 556 | 8 | 4 | 1 | 1 | ..... | 6 | 11 | 28 | 58 |
| Clarkstown | 6,305 | 77 | ..... | ..... | ..... | ..... | ..... | 1 | 3 | 5 | 4 |
| Haverstraw | 9,874 | 123 | 1 | ..... | 1 | 1 | ..... | ..... | 3 | 7 | 13 |
| Orangetown | 6,181 | 71 | 2 | ..... | ..... | ..... | ..... | ..... | 1 | 1 | 4 |
| *Nyack* | 4,275 | 71 | ..... | 3 | ..... | ..... | ..... | ..... | 2 | 4 | 6 |
| Ramapo | 7,502 | 160 | ..... | 1 | ..... | ..... | ..... | 5 | 2 | 6 | 23 |
| Stony Point | 4,161 | 54 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5 | 8 |
| **St. Lawrence county** | 89,088 | 1,226 | 3 | 19 | ..... | 5 | 20 | 7 | 14 | 46 | 102 |
| OGDENSBURG | 12,633 | 252 | 1 | 4 | ..... | ..... | 2 | 2 | 1 | 29 | 28 |
| Brasher | 2,703 | 41 | ..... | 1 | ..... | 1 | 4 | ..... | 3 | 2 | 2 |
| Canton | 6,387 | 116 | 1 | 3 | ..... | ..... | 1 | ..... | 3 | 3 | 11 |
| Clare | 330 | 8 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 1 |
| Clifton | 1,382 | 12 | ..... | 1 | ..... | ..... | ..... | ..... | 1 | ..... | 1 |
| Colton | 1,678 | 26 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| De Kalb | 2,723 | 20 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| De Peyster | 936 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Edwards | 1,340 | 16 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Fine | 1,694 | 23 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 | 2 |
| Fowler | 1,716 | 21 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Gouverneur | 5,915 | 95 | 1 | 3 | ..... | 2 | ..... | ..... | 1 | 1 | 13 |
| Hammond | 1,764 | 19 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Hermon | 1,542 | 24 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| Hopkinton | 2,521 | 25 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| Lawrence | 1,963 | 23 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 2 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Macomb | 1,574 | 13 | | | | 2 | | | | | |
| Madrid | 1,668 | 26 | | | | | | 2 | | 1 | |
| Massena | 3,904 | 24 | | 1 | | | | | 2 | | 2 |
| Morristown | 1,798 | 22 | | | | | | | | | 2 |
| Norfolk | 1,911 | 18 | | | | | 1 | | | | |
| Oswegatchie | 2,368 | 31 | | | | | | | | | 5 |
| Parishville | 2,086 | 44 | | | | | 1 | 1 | | 2 | 4 |
| Piercefield | | 1 | | | | | 1 | | | | |
| Pierrepont | 1,885 | 14 | | | | | 1 | | | | |
| Pitcairn | 902 | 8 | | | | | | | | | |
| Potsdam | 5,211 | 68 | | | | | 2 | 1 | | 1 | 7 |
| *Potsdam* | 3,843 | 55 | | 3 | | | | | | | 7 |
| Rossie | 1,136 | 13 | | | | | | 1 | | | 2 |
| Russell | 2,067 | 31 | | 1 | | | 1 | | | | 1 |
| Stockholm | 2,826 | 38 | | | | | | | 2 | | 2 |
| Waddington | 2,001 | 22 | | | | | 1 | | | | 3 |
| **Saratoga county** | **61,089** | **1,092** | **4** | **25** | **2** | **7** | **13** | **6** | **16** | **33** | **85** |
| *Ballston Spa* | 3,923 | 56 | | 2 | | | | | 2 | 1 | 4 |
| Ballston | 1,501 | 28 | | | | | 1 | | | | 2 |
| Charlton | 1,109 | 18 | | | | 1 | | | | | 1 |
| Clifton Park | 2,140 | 35 | | | | | | | | | 1 |
| Corinth | 3,104 | 46 | | 1 | | | | 1 | 1 | 2 | 3 |
| Day | 719 | 12 | | | | | | | | | |
| Edinburgh | 1,032 | 19 | | | | | | | | | |
| Galway | 1,350 | 19 | | 1 | | | | | | | |
| Greenfield | 1,837 | 33 | | | | | | | | | 1 |
| Hadley | 914 | 21 | | 1 | | | | | | | 1 |
| Halfmoon | 1,906 | 33 | | | | | | | | 1 | 2 |
| Malta | 1,322 | 25 | | 2 | | | | | | | |
| *Mechanicville* | 4,695 | 92 | | 2 | 1 | | 1 | 1 | 2 | 5 | 7 |
| Milton | 2,536 | 76 | 1 | 1 | | 4 | 2 | | 2 | 2 | 11 |
| Moreau | 2,999 | 33 | | | | 1 | | | 1 | 1 | 2 |
| Northumberland | 1,227 | 10 | | 1 | | | | | | | 2 |
| Providence | 607 | 14 | | | | | | | | 1 | |
| Saratoga | 3,999 | 53 | | | | | | | | 2 | 3 |

* See the City of New York.

*Record of each reporting local board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Saratoga county**—(*Continued*) | | | | | | | | | | | |
| Saratoga Springs | 1,125 | 11 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| *Saratoga Springs* | 12,409 | 287 | 2 | 10 | 1 | 1 | 7 | 2 | 4 | 10 | 27 |
| Stillwater | 3,489 | 50 | 1 | 1 | ..... | ..... | 1 | 2 | 1 | ..... | 2 |
| Waterford | 6,157 | 107 | ..... | 3 | ..... | ..... | 1 | ..... | 3 | 8 | 15 |
| Wilton | 989 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| **Schenectady county** | 46,852 | 840 | ..... | 20 | ..... | 8 | 8 | 8 | 40 | 64 | 74 |
| SCHENECTADY | 31,682 | 609 | ..... | 15 | ..... | 3 | 2 | 1 | 30 | 49 | 61 |
| Duanesburgh | 2,428 | 34 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| Glenville | 3,010 | 51 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 2 | 3 |
| Niskayuna | 1,327 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... |
| Princetown | 694 | 7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Rotterdam | 7,711 | 121 | ..... | 4 | ..... | ..... | 1 | 2 | 9 | 12 | 8 |
| **Schoharie county** | 26,854 | 411 | 1 | 11 | ..... | 1 | 4 | ..... | ..... | 7 | 21 |
| Blenheim | 768 | 9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Broome | 1,153 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Carlisle | 1,225 | 16 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Cobleskill | 3,973 | 40 | ..... | 1 | ..... | 1 | 1 | ..... | ..... | ..... | 2 |
| Conesville | 793 | 7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Esperance | 1,096 | 9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Fulton | 1,998 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Gilboa | 1,448 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Jefferson | 1,409 | 25 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Middleburgh | 2,738 | 55 | ..... | 4 | ..... | ..... | 1 | ..... | ..... | 1 | 9 |
| Richmondville | 1,719 | 30 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 1 |
| Schoharie | 2,700 | 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Summit | 1,217 | 26 | 1 | 1 | | | | | | | 1 |
| Wright | 1,155 | 20 | | | | | 1 | | | | |
| **Schuyler county** | **15,811** | **288** | **1** | **1** | | | **3** | | **3** | **1** | **8** |
| Catherine | 1,386 | 21 | | | | | | | | | 1 |
| Cayuta | 459 | 9 | | 1 | | | | | | | |
| Dix | 3,894 | 54 | 1 | | | | | | | | 3 |
| Hector | 4,137 | 50 | | | | | 2 | | | 1 | |
| Montour | 1,623 | 30 | | | | | 1 | | | | 1 |
| Orange | 1,391 | 18 | | | | | | | | | 2 |
| Reading | 1,335 | 22 | | | | | | | | | |
| Tyrone | 1,586 | 29 | | | | | | | 3 | | 1 |
| **Seneca county** | **28,114** | **394** | **1** | **2** | | **1** | **1** | **4** | **2** | **8** | **38** |
| Covert | 1,897 | 41 | 1 | | | | 1 | 1 | | 1 | 2 |
| Fayette | 2,056 | 43 | | | | | | | | | 3 |
| Junius | 1,053 | 9 | | | | | | 1 | | | |
| Lodi | 1,636 | 26 | | | | | | | | | 2 |
| Ovid | 3,734 | 38 | | | | | | | | 1 | 3 |
| Romulus | 2,895 | 25 | | | | 1 | | | 2 | 1 | 5 |
| Seneca Falls | 786 | 7 | | | | | | | | | 1 |
| *Seneca Falls* | 6,519 | 105 | | 2 | | | | 1 | | 2 | 14 |
| Tyre | 954 | 8 | | | | | | 1 | | | |
| Varick | 1,270 | 10 | | | | | | | | | |
| Waterloo | 1,058 | 11 | | | | | | | | | 3 |
| *Waterloo* | 4,256 | 71 | | | | | | | | 3 | 5 |
| **Steuben county** | **82,822** | **1,034** | **8** | **15** | | **2** | **10** | **13** | **4** | **24** | **71** |
| CORNING | 11,061 | 178 | 2 | 5 | | 1 | 2 | | | 11 | 21 |
| HORNELLSVILLE | 11,918 | 174 | 1 | 4 | | | 7 | 8 | 1 | 5 | 20 |
| Addison | 2,637 | 30 | | | | | | 1 | | | |
| Avoca | 2,125 | 16 | | | | | | | | | 1 |
| Bath | 3,443 | 64 | | | | | | | | 2 | 3 |
| *Bath* | 4,494 | 60 | | | | | | | | | 3 |
| Bradford | 771 | 15 | | | | | | | | | 1 |
| Cameron | 1,353 | 16 | | | | | | | | | |
| Campbell | 1,467 | 20 | | | | | | | | | 1 |
| Canisteo | 3,432 | 54 | | 2 | | | | | | 1 | 3 |

*Record of each reporting board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Steuben county—(*Continued*)** | | | | | | | | | | | |
| Caton | 1,345 | 16 | | | | | | | | | 1 |
| Cohocton | 3,197 | 45 | | | | | | | | | |
| Corning | 1,937 | 18 | | | | 1 | | | | | 1 |
| Dansville | 1,417 | 18 | | | | | | | | | 1 |
| Erwin | 1,851 | 24 | | | | | | 1 | | | |
| Fremont | 1,033 | 15 | | | | | 1 | | | 1 | |
| Greenwood | 1,129 | 10 | | | | | | | | | 1 |
| Hartsville | 787 | 4 | | | | | | | 1 | | |
| Hornby | 959 | 6 | | | | | | 1 | | | |
| Hornellsville | 1,833 | 19 | | | | | | 1 | | | 1 |
| Howard | 1,704 | 14 | | | | | | | | | 1 |
| Jasper | 1,430 | 19 | | 1 | | | | | | | 2 |
| Lindley | 1,306 | 12 | | | | | | | | | 1 |
| Prattsburgh | 2,197 | 13 | | | | | | | | | |
| Pultney | 1,590 | 20 | | | | | | | | | 3 |
| Rathbone | 1,059 | 8 | | 1 | | | | | | 1 | |
| Thurston | 1,017 | 16 | | | | | | | | | 1 |
| Troupsburgh | 2,015 | 18 | | 1 | | | | | | 1 | 1 |
| Tuscarora | 1,301 | 7 | | | | | | 1 | | | |
| Urbana | 2,692 | 37 | | | | | | | 1 | 2 | 2 |
| Wayland | 2,984 | 34 | | 1 | | | | | | | |
| Wayne | 838 | 10 | | | | | | | | | 1 |
| West Union | 1,025 | 8 | | | | | | | | | |
| Wheeler | 1,188 | 7 | | | | | | | 1 | | |
| Woodhull | 1,787 | 9 | | | | | | | | | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Babylon | 7,112 | 146 | | 2 | | | | 2 | | 2 | |
| Brookhaven | 14,592 | 206 | | 1 | | 1 | 1 | | | 5 | 22 |
| East Hampton | 2,724 | 37 | | | | | | | 2 | 6 | 1 |
| Huntington | 9,483 | 127 | | 2 | | | | | | 7 | 11 |
| Islip | 12,545 | 172 | | 2 | | | | 1 | | 9 | 18 |
| Riverhead | 4,503 | 49 | | 1 | | | | 3 | | 2 | 4 |
| Shelter Island | 1,066 | 11 | | | | | | | | | |
| Smithtown | 5,863 | 209 | | 1 | | | | 1 | | 15 | 46 |
| Southampton | 9,424 | 88 | | | | | | 1 | | 2 | 6 |
| *Sag Harbor* | 1,969 | 49 | | | 1 | | | | 1 | 4 | 7 |
| Southold | 8,301 | 96 | | | | | | | | 7 | 5 |
| **Sullivan county** | **32,806** | **490** | **1** | **6** | | | | **8** | **4** | **14** | **88** |
| Bethel | 2,248 | 29 | | | | | | | | | |
| Callicoon | 2,054 | 23 | | | | | | 1 | | | 1 |
| Cochecton | 1,117 | 14 | | | | | | | | | 1 |
| Delaware | 1,541 | 21 | | | | | | | | 2 | 1 |
| Fallsburgh | 2,974 | 32 | | | | | | 1 | | 1 | 4 |
| Forestburgh | 625 | 6 | | | | | | | | | |
| Fremont | 2,184 | 25 | | | | | | | | 3 | |
| Highland | 964 | 18 | | 1 | | | | | | | 2 |
| Liberty | 4,568 | 138 | | 2 | | | | 1 | 3 | 4 | 61 |
| Lumberland | 809 | 5 | | | | | | | | | 1 |
| Mamakating | 3,128 | 49 | | | | | | | | 2 | 4 |
| Neversink | 2,039 | 23 | | 1 | | | | | | | 1 |
| Rockland | 3,426 | 36 | | 1 | | | | | | 1 | 2 |
| Thompson | 3,739 | 57 | 1 | | | | | | | | 10 |
| Tusten | 890 | 14 | | 1 | | | | | 1 | 1 | |
| **Tioga county** | **27,951** | **446** | **2** | **6** | | | **8** | **5** | **8** | **7** | **28** |
| *Waverly* | 4,465 | 77 | | 1 | | | | | | 1 | 6 |
| Barton | 1,916 | 26 | | | | | | | | 1 | |
| Berkshire | 1,011 | 10 | | | | | | | | | |
| Candor | 3,330 | 50 | 1 | 2 | | | 1 | | 1 | 1 | 2 |
| Newark Valley | 2,164 | 32 | | 1 | | | 4 | | | 1 | 1 |
| Nichols | 1,564 | 20 | | | | | | | | | |
| Owego | 3,339 | 49 | | | | | | 1 | | 1 | 2 |
| *Owego* | 5,039 | 96 | 1 | 1 | | | 1 | | | 2 | 10 |

*Record of each reporting board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Steuben county**—(*Continued*) | | | | | | | | | | | |
| Caton | 1,345 | 16 | | | | | | | | | 1 |
| Cohocton | 3,197 | 45 | | | | | | | | | |
| Corning | 1,937 | 18 | | | | 1 | | | | | 1 |
| Dansville | 1,417 | 18 | | | | | | | | | 1 |
| Erwin | 1,851 | 24 | | | | | | 1 | | | |
| Fremont | 1,033 | 15 | | | | | 1 | | | 1 | |
| Greenwood | 1,129 | 10 | | | | | | | | | 1 |
| Hartsville | 787 | 4 | | | | | | | 1 | | |
| Hornby | 959 | 6 | | | | | | 1 | | | |
| Hornellsville | 1,833 | 19 | | | | | | 1 | | | 1 |
| Howard | 1,704 | 14 | | | | | | | | | 1 |
| Jasper | 1,430 | 19 | | 1 | | | | | | | 2 |
| Lindley | 1,306 | 12 | | | | | | | | | 1 |
| Prattsburgh | 2,197 | 13 | | | | | | | | | |
| Pultney | 1,590 | 20 | | | | | | | | | 3 |
| Rathbone | 1,059 | 8 | | 1 | | | | | | 1 | |
| Thurston | 1,017 | 16 | | | | | | | | | 1 |
| Troupsburgh | 2,015 | 18 | | 1 | | | | | | 1 | 1 |
| Tuscarora | 1,301 | 7 | | | | | | 1 | | | |
| Urbana | 2,692 | 37 | | | | | | | 1 | 2 | 2 |
| Wayland | 2,984 | 34 | | 1 | | | | | | | |
| Wayne | 838 | 10 | | | | | | | | | 1 |
| West Union | 1,025 | 8 | | | | | | | | | |
| Wheeler | 1,188 | 7 | | | | | | | 1 | | |
| Woodhull | 1,787 | 9 | | | | | | | | | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Suffolk county** | 77,582 | 1,190 | | 9 | 1 | 1 | 1 | 8 | 8 | 86 | 195 |
| Babylon | 7,112 | 146 | | 2 | | | | 2 | | 2 | 6 |
| Brookhaven | 14,592 | 206 | | 1 | | 1 | 1 | | | 5 | 22 |
| East Hampton | 2,724 | 37 | | | | | | | 2 | 6 | 1 |
| Huntington | 9,483 | 127 | | 2 | | | | | | 7 | 11 |
| Islip | 12,545 | 172 | | 2 | | | | 1 | | 9 | 18 |
| Riverhead | 4,503 | 49 | | 1 | | | | 3 | | 2 | 4 |
| Shelter Island | 1,066 | 11 | | | | | | | | | |
| Smithtown | 5,863 | 209 | | 1 | | | | 1 | | 15 | 46 |
| Southampton | 9,424 | 88 | | | | | | 1 | | 2 | 6 |
| *Sag Harbor* | 1,969 | 49 | | | 1 | | | | 1 | 4 | 7 |
| Southold | 8,301 | 96 | | | | | | | | 7 | 5 |
| **Sullivan county** | 32,206 | 490 | 1 | 6 | | | | 8 | 4 | 14 | 88 |
| Bethel | 2,248 | 29 | | | | | | | | | |
| Callicoon | 2,054 | 23 | | | | | | 1 | | | 1 |
| Cochecton | 1,117 | 14 | | | | | | | | | 1 |
| Delaware | 1,541 | 21 | | | | | | | | 2 | 1 |
| Fallsburgh | 2,974 | 32 | | | | | | 1 | | 1 | 4 |
| Forestburgh | 625 | 6 | | | | | | | | | |
| Fremont | 2,184 | 25 | | | | | | | | 3 | |
| Highland | 964 | 18 | | 1 | | | | | | | 2 |
| Liberty | 4,568 | 138 | | 2 | | | | 1 | 3 | 4 | 61 |
| Lumberland | 809 | 5 | | | | | | | | | 1 |
| Mamakating | 3,128 | 49 | | | | | | | | 2 | 4 |
| Neversink | 2,039 | 23 | | 1 | | | | | | | 1 |
| Rockland | 3,426 | 36 | | 1 | | | | | | 1 | 2 |
| Thompson | 3,739 | 57 | 1 | | | | | | | | 10 |
| Tusten | 890 | 14 | | 1 | | | | | 1 | 1 | |
| **Tioga county** | 27,951 | 446 | 2 | 6 | | | 8 | 5 | 8 | 7 | 28 |
| *Waverly* | 4,465 | 77 | | 1 | | | | | | 1 | 6 |
| Barton | 1,916 | 26 | | | | | | | | 1 | |
| Berkshire | 1,011 | 10 | | | | | | | | | |
| Candor | 3,330 | 50 | 1 | 2 | | | 1 | | 1 | 1 | 2 |
| Newark Valley | 2,164 | 32 | | 1 | | | 4 | | | 1 | 1 |
| Nichols | 1,564 | 20 | | | | | | | | | |
| Owego | 3,339 | 49 | | | | | | 1 | | 1 | 2 |
| *Owego* | 5,039 | 96 | 1 | 1 | | | 1 | | | 2 | 10 |

*Record of each reporting board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Tioga county**—(*Continued*) | | | | | | | | | | | |
| Richford | 1,142 | 15 | ..... | 1 | ..... | ..... | ..... | ..... | 1 | ..... | ..... |
| Spencer | 1,868 | 46 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... | 2 |
| Tioga | 2,113 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| **Tompkins county** | 33,880 | 478 | ..... | 11 | ..... | ..... | ..... | 4 | 1 | 20 | 26 |
| ITHACA | 13,136 | 192 | ..... | 6 | ..... | ..... | ..... | 2 | 1 | 12 | 16 |
| Caroline | 1,938 | 30 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Danby | 1,449 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3 | 2 |
| Dryden | 3,785 | 58 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 2 |
| Enfield | 1,214 | 16 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Groton | 3,564 | 33 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | 2 | ..... |
| Ithaca | 1,516 | 15 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 |
| Lansing | 2,550 | 36 | ..... | 1 | ..... | ..... | ..... | 1 | ..... | ..... | 4 |
| Newfield | 1,902 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Ulysses | 2,776 | 41 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| **Ulster county** | 88,422 | 1,424 | 5 | 14 | 4 | 41 | 2 | 2 | 34 | 37 | 121 |
| KINGSTON | 24,535 | 466 | 1 | 3 | ..... | 28 | 1 | ..... | 13 | 15 | 47 |
| Denning | 783 | 7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Esopus | 4,907 | 87 | ..... | 1 | 1 | 3 | ..... | ..... | 7 | 4 | 3 |
| Gardiner | 1,509 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Hardenburgh | 722 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Hurley | 1,903 | 31 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Kingston | 524 | 9 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 1 |
| Lloyd | 2,608 | 48 | ..... | 1 | ..... | ..... | ..... | ..... | 1 | ..... | 4 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Marbletown | 3,511 | 55 | 1 | 2 | 1 | 1 | | | | | 4 |
| Marlborough | 3,978 | 73 | | 1 | | | | | | 1 | 8 |
| New Paltz | 2,264 | 43 | | | | | | | 1 | 1 | 2 |
| Olive | 2,465 | 38 | | | | | | | 1 | 2 | 7 |
| Plattekill | 1,866 | 20 | | | | | | | | | |
| Rochester | 2,874 | 44 | | | 1 | 2 | | | | 1 | 2 |
| Rosendale | 6,278 | 104 | 1 | 1 | 1 | 3 | | | 6 | 3 | 4 |
| Saugerties | 6,057 | 87 | 2 | | | | | | 2 | | 12 |
| *Saugerties* | 3,697 | 67 | | 2 | | 3 | 1 | 1 | 2 | 2 | 9 |
| Shandaken | 3,053 | 46 | | | | | | | | 2 | 2 |
| Shawangunk | 2,406 | 43 | | | | | | | | 3 | 4 |
| Ulster | 3,582 | 1 | | | | | | | | | |
| Wawarsing | 4,346 | 49 | | 2 | | | | | | 1 | |
| *Ellenville* | 2,879 | 58 | | 1 | | | | 1 | | 1 | 7 |
| Woodstock | 1,675 | 15 | | | | 1 | | | | | 1 |
| **Warren county** | **29,948** | **510** | **4** | **9** | **1** | **7** | **4** | **1** | **8** | **17** | **35** |
| Bolton | 1,363 | 15 | | | | | | | | | |
| Caldwell | 1,465 | 32 | | | | | | | | | 2 |
| Chester | 2,052 | 29 | | | | | | | | | 1 |
| Hague | 1,042 | 10 | | | | | | | 1 | | |
| Horicon | 1,136 | 13 | | | | | | | | | |
| Johnsburgh | 2,374 | 26 | 1 | | | | | | | 1 | 1 |
| Luzerne | 1,341 | 21 | | | | | | | | | 2 |
| Queensbury | 2,377 | 31 | | | | | | | | | 1 |
| *Glens Falls* | 12,613 | 271 | 3 | 8 | 1 | 7 | 4 | 1 | 2 | 16 | 23 |
| Stony Creek | 1,019 | 19 | | | | | | | | | 2 |
| Thurman | 809 | 9 | | | | | | | | | |
| Warrensburgh | 2,352 | 34 | | 1 | | | | | | | 3 |
| **Washington county** | **45,624** | **682** | **4** | **9** | **1** | **7** | **8** | **5** | **14** | **30** | **52** |
| Argyle | 1,995 | 40 | | | | | | | | | 4 |
| Cambridge | 1,878 | 42 | | | | | | | | | 4 |
| Dresden | 545 | 1 | | | | | | | 1 | | |
| Easton | 2,247 | 23 | 1 | 1 | | | | | 1 | 1 | |
| Fort Ann | 2,263 | 34 | | | | 3 | | | | | 2 |
| Fort Edward | 5,216 | 95 | 2 | 1 | 1 | | 1 | | 6 | 6 | 7 |

*Record of each reporting board of health, etc.*—(Continued)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Washington county**—*Continued*)) | | | | | | | | | | | |
| *Sandy Hill* | 4,473 | 62 | ..... | 1 | ..... | 2 | 1 | ..... | 1 | 5 | 8 |
| Granville | 5,217 | 74 | 1 | 1 | ..... | 1 | ..... | 4 | ..... | 2 | 7 |
| Greenwich | 4,172 | 109 | ..... | 2 | ..... | ..... | 1 | 1 | ..... | 11 | 9 |
| Hampton | 689 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... |
| Hartford | 1,290 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hebron | 1,679 | 18 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Jackson | 1,059 | 16 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Kingsbury | 1,627 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Putnam | 505 | 9 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 1 | ..... |
| Salem | 2,978 | 45 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 4 |
| White Creek | 2,496 | 31 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Whitehall | 919 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| *Whitehall* | 4,377 | 52 | ..... | ..... | ..... | ..... | ..... | ..... | 4 | 2 | 4 |
| **Wayne county** | 48,660 | 668 | 4 | 10 | ..... | 8 | 4 | 8 | 4 | 11 | 41 |
| *Newark* | 4,578 | 61 | ..... | 1 | ..... | 1 | ..... | ..... | 1 | 3 | 6 |
| Arcadia | 2,468 | 25 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 1 | 3 |
| Butler | 1,786 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Galen | 2,099 | 29 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 |
| *Clyde* | 2,507 | 35 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| Huron | 1,667 | 18 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | 3 |
| Lyons | 5,824 | 126 | 2 | 2 | ..... | ..... | 1 | 1 | 2 | 5 | 6 |
| Macedon | 2,488 | 21 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Marion | 2,015 | 25 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 |
| Ontario | 2,550 | 26 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 3 |
| Palmyra | 3,758 | 60 | 1 | 2 | ..... | 1 | ..... | ..... | ..... | ..... | 3 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rose | 2,055 | 34 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... | 4 |
| Savannah | 1,733 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Sodus | 5,118 | 55 | 1 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | 4 |
| Walworth | 2,137 | 21 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Williamson | 2,670 | 40 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 1 |
| Wolcott | 3,207 | 44 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| **Westchester county** | **183,375** | **3,154** | **12** | **27** | **15** | **10** | **12** | **25** | **61** | **179** | **333** |
| YONKERS | 47,931 | 842 | 5 | 8 | 4 | 1 | ..... | ..... | 12 | 51 | 101 |
| MOUNT VERNON | 20,346 | 326 | 2 | 3 | ..... | ..... | 1 | 2 | 6 | 27 | 25 |
| Bedford | 3,497 | 99 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 32 |
| Cortlandt | 8,345 | 102 | ..... | ..... | ..... | ..... | ..... | 5 | ..... | 1 | 4 |
| *Peekskill* | 10,358 | 227 | ..... | 1 | 2 | 2 | ..... | 3 | 5 | 15 | 23 |
| East Chester | 3,040 | 40 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 | 4 |
| Greenburgh | 14,894 | 229 | 1 | ..... | 3 | ..... | 8 | ..... | 12 | 11 | 19 |
| Harrison | 2,048 | 30 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 4 |
| Lewisboro | 1,311 | 23 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Mamaroneck | 3,849 | 93 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 5 | 5 |
| Mount Pleasant | 8,698 | 198 | ..... | 1 | 1 | ..... | ..... | ..... | 3 | 6 | 30 |
| New Castle | 2,401 | 30 | ..... | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| NEW ROCHELLE | 14,720 | 263 | 2 | 6 | 2 | 1 | ..... | 2 | 5 | 17 | 19 |
| North Castle | 1,471 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5 |
| North Salem | 1,133 | 16 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... |
| Ossining | 2,956 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| *Ossining* | 7,939 | 160 | ..... | 3 | 2 | ..... | ..... | 3 | 2 | 4 | 24 |
| Pelham | 1,571 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Poundridge | 823 | 17 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| *Port Chester* | 7,440 | 163 | ..... | 2 | 1 | ..... | 2 | 1 | 9 | 27 | 13 |
| Rye | 5,421 | 49 | ..... | 1 | ..... | 2 | ..... | ..... | 1 | ..... | 4 |
| Scarsdale | 885 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Somers | 1,338 | 18 | 1 | ..... | ..... | 1 | ..... | ..... | 1 | ..... | 2 |
| White Plains | 640 | 11 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 1 |
| *White Plains* | 7,899 | 148 | 1 | 1 | ..... | 3 | 1 | 5 | 2 | 8 | 12 |
| Yorktown | 2,421 | 33 | ..... | 1 | ..... | ..... | ..... | 1 | ..... | 1 | 2 |

*Record of each reporting board of health, etc.*—(Concluded)

| NAME OF PLACE | Population | All deaths | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Scarlet fever | Measles | Whooping cough | Diphtheria | Diarrhea | Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Wyoming county** | 30,418 | 425 | ..... | 8 | ..... | ..... | ..... | ..... | 2 | 6 | 16 |
| Arcade | 1,877 | 16 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Attica | 2,677 | 43 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Bennington | 1,904 | 22 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Castile | 2,539 | 38 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Covington | 930 | 16 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 1 |
| Eagle | 1,114 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gainesville | 2,325 | 31 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Genesee Falls | 658 | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Java | 1,770 | 20 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Middlebury | 1,406 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Orangeville | 1,005 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Perry | 3,862 | 57 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4 |
| Pike | 1,277 | 23 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Sheldon | 1,801 | 16 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Warsaw | 4,341 | 65 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 3 | 2 |
| Wethersfield | 927 | 11 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| **Yates county** | 20,818 | 272 | 2 | 4 | ..... | 8 | ..... | 4 | ..... | 8 | 18 |
| Barrington | 1,249 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Benton | 1,970 | 23 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Dundee | 1,291 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Italy | 1,094 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Jerusalem | 2,775 | 31 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3 |
| Middlesex | 1,282 | 11 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Milo | 1,877 | 16 | 1 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| *Penn Yan* | 4,650 | 91 | ..... | ..... | ..... | 1 | ..... | 4 | ..... | 1 | 9 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | [illegible] | [illegible] | 1 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| ..... | 1,065 | 17 | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | 1 |
| State prisons | ..... | 10 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| State asylums | ..... | 705 | ..... | 9 | ..... | ..... | 3 | ..... | 1 | 3 | 81 |
| Other public institutions | ..... | 257 | 3 | ..... | ..... | ..... | ..... | ..... | 2 | 10 | 19 |

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS,

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| **MARITIME DISTRICT** | | | | | | | | | |
| Totals | 3,852,922 | 7,218 | 22.0 | 1,744 | 24.2 | 1,008 | 85 | 13 | 69 |
| **CITY OF NEW YORK** | | | | | | | | | |
| Totals | 3,536,517 | 6,688 | 22.2 | 1,646 | 24.6 | 888 | 86 | 13 | 62 |
| BOROUGH OF MANHATTAN | 1,873,562 | 3,729 | 20.6 | 919 | 24.6 | 443 | 85 | 5 | 40 |
| BOROUGH OF THE BRONX | 222,124 | 483 | 23.5 | 97 | 22.4 | 59 | 110 | 6 | 1 |
| BOROUGH OF BROOKLYN | 1,209,064 | 2,148 | 20.8 | 556 | 25.5 | 311 | 92 | 2 | 20 |
| BOROUGH OF QUEENS | 162,834 | 260 | 18.8 | 58 | 22.3 | 46 | 50 | .... | 1 |
| BOROUGH OF RICHMOND | 68,933 | 118 | 20.0 | 16 | 13.5 | 49 | 26 | .... | .... |
| Oyster Bay | 16,334 | 24 | ..... | 4 | 16.7 | 8 | 335 | .... | .... |
| Hempstead | 27,066 | 23 | ..... | 1 | 4.0 | 5 | 43 | .... | 1 |
| North Hempstead | 12,048 | 23 | ..... | 8 | 35.0 | 3 | 130 | .... | .... |
| Southold | 8,301 | 8 | ..... | 0 | ..... | 5 | ..... | .... | .... |
| *Sag Harbor* | 2,000 | 4 | ..... | 1 | 25.0 | 0 | ..... | .... | .... |
| Huntington | 9,483 | 11 | ..... | 1 | 9.0 | 5 | ..... | .... | .... |
| Brookhaven | 14,592 | 5 | ..... | 1 | ..... | 2 | ..... | .... | .... |
| YONKERS | 47,931 | 89 | ..... | 24 | 27.0 | 12 | 56 | .... | 2 |
| Greenburgh | 15,564 | 21 | ..... | 2 | 9.0 | 4 | 190 | .... | .... |
| MOUNT VERNON | 20,346 | 24 | ..... | 5 | 21.0 | 6 | 250 | .... | .... |
| *Port Chester* | 7,440 | 16 | ..... | 5 | 32.5 | 2 | 185 | .... | .... |
| *Ossining* | 7,939 | 16 | ..... | 2 | 12.5 | 2 | 62 | .... | 1 |
| NEW ROCHELLE | 14,720 | 33 | ..... | 4 | 12.5 | 9 | ..... | .... | .... |
| *Peekskill* | 10,358 | 21 | ..... | 1 | 5.0 | 7 | ..... | .... | .... |
| *White Plains* | 7,900 | 10 | ..... | 4 | 40.0 | 2 | 200 | .... | .... |
| Rest of district | 85,000 | 202 | 27.9 | 35 | 12.0 | 48 | 70 | .... | 3 |
| **HUDSON VALLEY DISTRICT** | | | | | | | | | |
| Totals | 688,393 | 1,192 | 20.0 | 196 | 16.5 | 322 | 80 | 4 | 25 |
| ALBANY | 94,151 | 188 | 23.5 | 25 | 13.3 | 40 | 85 | .... | 2 |
| COHOES | 23,910 | 49 | ..... | 11 | 22.5 | 9 | 143 | 1 | 3 |
| TROY (including *Lansingburgh*) | 73,250 | 167 | 26.5 | 27 | 16.2 | 30 | 60 | .... | 7 |
| WATERVLIET | 14,321 | 21 | ..... | 5 | 24.5 | 1 | 45 | .... | .... |
| *Green Island* | 4,770 | 10 | ..... | 5 | 50.0 | 0 | 200 | .... | .... |
| *Hoosick Falls* | 5,671 | 7 | ..... | 0 | ..... | 1 | 142 | .... | .... |
| RENSSELAER | 7,466 | 13 | ..... | 4 | 28.5 | 3 | 142 | .... | 1 |
| Coxsackie | 4,102 | 6 | ..... | 1 | 16.7 | 1 | ..... | .... | .... |
| *Catskill* | 5,484 | 17 | ..... | 3 | 17.7 | 6 | 177 | .... | 2 |
| HUDSON | 9,528 | 22 | ..... | 1 | 45.5 | 12 | ..... | .... | .... |
| KINGSTON | 24,535 | 50 | ..... | 14 | 28.0 | 8 | 260 | 1 | 1 |
| *Ellenville* | 3,000 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Marbletown | 3,511 | 7 | ..... | 1 | 14.2 | 2 | 142 | .... | .... |
| Rosendale | 6,278 | 12 | ..... | 6 | 50.0 | 0 | 83 | .... | .... |
| Esopus | 4,907 | 6 | ..... | 0 | ..... | 3 | 166 | .... | 1 |
| *Saugerties* | 3,697 | 7 | ..... | 3 | 42.8 | 1 | 285 | .... | .... |
| POUGHKEEPSIE | 24,029 | 45 | ..... | 6 | 13.3 | 19 | 87 | .... | 2 |
| Fishkill | 13,016 | 23 | ..... | 4 | 16.8 | 2 | 42 | .... | 1 |
| *Wappingers Falls* | 3,504 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| NEWBURGH | 25,000 | 38 | ..... | 6 | 15.7 | 15 | 53 | 1 | .... |
| *Port Jervis* | 9,385 | 17 | ..... | 2 | 11.8 | 9 | ..... | .... | .... |
| MIDDLETOWN | 14,522 | 30 | ..... | 4 | 13.3 | 9 | 33 | .... | .... |
| Warwick | 6,403 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Goshen | 4,561 | 7 | ..... | 0 | ..... | 3 | 142 | .... | .... |

## ɪɴ STATE DEPARTMENT OF HEALTH

### *ricts, cities, villages and towns during January*, 1901

[ies in *italic* and towns in roman type]

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 10 | 79 | 10 | 15 | 20 | 248 | 136 | 1,695 | 870 | 66 | 272 | 588 | 508 | 586 | 239 | 304 | 190 | 1,290 |
| 10 | 78 | 9 | 14 | 19 | 236 | 130 | 1,569 | 817 | 63 | 250 | 553 | 449 | 512 | 216 | 275 | 159 | 1,245 |
| 1 | 45 | 5 | 8 | 10 | 114 | 88 | 807 | 415 | 41 | 156 | 333 | 257 | 256 | 143 | 184 | 83 | 732 |
| 8 | 10 | 2 | 1 | .... | 16 | 2 | 95 | 114 | 4 | 12 | 24 | 22 | 30 | 6 | 11 | 8 | 59 |
| 1 | 22 | 2 | 4 | 7 | 95 | 40 | 542 | 242 | 16 | 63 | 172 | 148 | 185 | 57 | 67 | 54 | 405 |
| .... | 1 | .... | 1 | 2 | 6 | .... | 89 | 31 | 2 | 16 | 15 | 12 | 29 | 5 | 9 | 4 | 35 |
| .... | .... | .... | .... | .... | 5 | .... | 36 | 15 | .... | 3 | 9 | 10 | 12 | 5 | 4 | 5 | 14 |
| .... | .... | .... | .... | .... | .... | .... | 6 | 1 | .... | 1 | 2 | 1 | 3 | 4 | .... | 3 | 3 |
| .... | .... | .... | .... | .... | .... | .... | 5 | 2 | 1 | 1 | 2 | 3 | 2 | 1 | 1 | 1 | 3 |
| .... | .... | .... | .... | .... | 2 | .... | 3 | 1 | 1 | 4 | .... | 3 | 3 | 1 | 1 | 1 | 3 |
| .... | .... | .... | .... | .... | .... | .... | 3 | 1 | .... | .... | 1 | .... | 1 | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 2 | 1 | 2 | .... | 1 | 1 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 3 | 1 | .... | .... | .... | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | 1 | 2 | 26 | 12 | .... | 4 | 7 | 10 | 12 | 3 | 1 | 2 | 7 |
| .... | .... | .... | 1 | .... | 1 | .... | 8 | 2 | .... | .... | 3 | .... | 1 | .... | 3 | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 6 | 1 | .... | 2 | 3 | 4 | 2 | 1 | 2 | .... | 3 |
| .... | .... | .... | .... | .... | 3 | .... | 1 | 3 | .... | 1 | .... | .... | .... | 2 | 1 | 3 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 3 | 2 | .... | .... | 2 | 1 | 2 | 1 | 2 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 11 | 4 | .... | 1 | 2 | 7 | 1 | 1 | 2 | 1 | 3 |
| .... | .... | .... | .... | .... | .... | .... | 3 | 1 | 1 | .... | 3 | 2 | 4 | 1 | .... | 2 | 4 |
| .... | .... | 1 | .... | .... | 1 | .... | 1 | 1 | .... | .... | 1 | 4 | .... | .... | .... | .... | 1 |
| .... | 1 | .... | .... | 1 | 4 | 4 | 44 | 20 | .... | 8 | 7 | 22 | 40 | 8 | 14 | 13 | 12 |
| .... | 11 | 4 | 4 | 6 | 30 | 15 | 242 | 125 | 6 | 87 | 75 | 139 | 144 | 31 | 50 | 73 | 121 |
| .... | 2 | 1 | 1 | .... | 8 | 2 | 26 | 20 | 5 | 16 | 17 | 38 | 15 | 8 | 7 | 1 | 19 |
| .... | .... | .... | .... | .... | 1 | 2 | 8 | 8 | .... | 5 | 2 | 6 | 4 | 1 | .... | 3 | 5 |
| .... | .... | .... | .... | 1 | 2 | .... | 45 | 22 | 1 | 10 | 11 | 19 | 19 | .... | 1 | 3 | 26 |
| .... | .... | .... | .... | .... | .... | 1 | 7 | 1 | .... | 3 | 2 | 2 | 3 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | 1 | 1 | 3 | 1 | .... | 1 | .... | 2 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | 2 | 1 | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | 1 | .... | .... | 2 | 1 | .... | .... | .... | 4 | 1 | 2 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | 1 | .... | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | 1 | .... | 3 | .... | .... | 1 | 1 | 1 | 5 | 1 | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 5 | 4 | .... | 1 | 2 | 1 | 1 | 3 | 1 | 2 | 2 |
| .... | 7 | .... | 1 | .... | 3 | .... | 5 | 5 | .... | 5 | 1 | 2 | 3 | 2 | 4 | 2 | 8 |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | 1 | .... | 1 | 1 | .... | 1 | .... |
| .... | 1 | .... | .... | .... | .... | .... | 2 | 1 | .... | .... | .... | 1 | 1 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | 1 | .... | 5 | 1 | .... | 1 | .... | 1 | 1 | 1 | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | 2 | .... | .... | .... | 1 | .... |
| .... | 1 | .... | .... | 1 | .... | .... | .... | 2 | .... | .... | .... | .... | 1 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | 1 | 1 | 7 | 5 | .... | 5 | 3 | .... | 10 | 1 | 3 | 5 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 4 | 3 | .... | 2 | 1 | 3 | 2 | .... | 4 | 1 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | 1 | 1 | .... | .... | .... |
| .... | .... | .... | 1 | .... | .... | .... | 12 | 3 | .... | 1 | 4 | 2 | 4 | .... | 2 | 4 | 4 |
| .... | .... | .... | .... | .... | .... | .... | 6 | 1 | .... | 3 | 1 | 2 | .... | .... | 1 | 3 | .... |
| .... | .... | .... | .... | .... | .... | 1 | 5 | .... | .... | 2 | 2 | 5 | 4 | 1 | 3 | 3 | 4 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... |
| .... | .... | .... | 1 | .... | .... | .... | 1 | .... | .... | .... | .... | 3 | 2 | .... | .... | .... | .... |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| **HUDSON VALLEY DIST.—(*Con.*)** | | | | | | | | | |
| Montgomery | 5,939 | 11 | ..... | 1 | 9.0 | 5 | 90 | .... | .... |
| Haverstraw | 9,874 | 7 | ..... | 3 | 42.5 | 0 | ..... | .... | .... |
| *Nyack* | 4,275 | 7 | ..... | 1 | 14.2 | 2 | ..... | .... | .... |
| Ramapo | 7,502 | 12 | ..... | 1 | 8.3 | 5 | ..... | .... | .... |
| Rest of district | 271,800 | 396 | 17.1 | 62 | 16.0 | 130 | 75 | 1 | 5 |
| **ADIRONDACK AND NORTH'N DISTRICT** | | | | | | | | | |
| Totals | 394,762 | 527 | 15.7 | 118 | 22.4 | 133 | 130 | 6 | 16 |
| WATERTOWN | 21,700 | 47 | ..... | 15 | 32.0 | 7 | 192 | .... | .... |
| Ellisburgh | 3,888 | 8 | ..... | 1 | 12.5 | 3 | 250 | 1 | 1 |
| Cape Vincent | 2,882 | 1 | ..... | 1 | ..... | ..... | ..... | .... | .... |
| Clayton | 4,315 | 5 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| OGDENSBURGH | 12,933 | 14 | ..... | 4 | 28.5 | 2 | 142 | .... | 2 |
| Gouverneur | 6,000 | 11 | ..... | 2 | 19.1 | 1 | 272 | 3 | .... |
| *Potsdam* | 3,843 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Canton | 6,387 | 7 | ..... | 1 | 14.2 | 2 | 142 | .... | .... |
| *Malone* | 5,935 | 9 | ..... | 4 | 44.4 | 2 | ..... | .... | .... |
| *Plattsburgh* | 8,434 | 8 | ..... | 4 | 50.0 | 0 | 375 | .... | .... |
| *Glens Falls* | 12,613 | 27 | ..... | 7 | 26.0 | 6 | 148 | 1 | 2 |
| *Whitehall* | 4,377 | 6 | ..... | 1 | 16.7 | 1 | ..... | .... | .... |
| Fort Edward | 5,216 | 8 | ..... | 1 | 12.5 | 3 | 125 | .... | .... |
| *Sandy Hill* | 4,473 | 3 | ..... | 1 | 33.3 | 0 | 333 | .... | .... |
| Granville | 5,217 | 5 | ..... | 2 | 40.0 | 1 | ..... | .... | .... |
| Greenwich | 4,172 | 9 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Lowville | 6,746 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Rest of district | 376,943 | 358 | 15.1 | 74 | 27.0 | 96 | 150 | 1 | 11 |
| **MOHAWK VALLEY DISTRICT** | | | | | | | | | |
| Totals | 408,974 | 650 | 18.8 | 117 | 18.2 | 218 | 70 | 2 | 7 |
| SCHENECTADY | 31,682 | 50 | ..... | 24 | 48.0 | 10 | 100 | .... | .... |
| Cobleskill | 3,973 | 5 | ..... | 0 | ..... | 3 | 200 | .... | .... |
| AMSTERDAM | 20,929 | 39 | ..... | 7 | 18.5 | 10 | ..... | .... | .... |
| *Fort Plain* | 2,444 | 6 | ..... | 1 | 16.7 | 1 | 167 | .... | 1 |
| JOHNSTOWN | 10,130 | 10 | ..... | 0 | ..... | 6 | .... | .... | .... |
| GLOVERSVILLE | 18,349 | 21 | ..... | 4 | 19.5 | 5 | 50 | 1 | .... |
| LITTLE FALLS | 10,381 | 15 | ..... | 1 | 6.6 | 8 | 53 | .... | .... |
| *Herkimer* | 5,555 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| *Ilion* | 5,738 | 8 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| UTICA | 56,383 | 132 | 27.5 | 29 | 22.0 | 38 | 68 | .... | .... |
| Whitestown | 6,235 | 5 | ..... | 1 | 20.0 | 0 | ..... | .... | .... |
| ROME | 15,343 | 26 | ..... | 3 | 11.8 | 14 | 38 | .... | 1 |
| Boonville | 3,332 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Camden | 3,745 | 5 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Waterford | 6,157 | 10 | ..... | 3 | 30.0 | 1 | 100 | .... | .... |
| *Mechanicville* | 4,695 | 10 | ..... | 2 | 20.0 | 3 | 200 | .... | 1 |
| *Ballston Spa* | 3,923 | 6 | ..... | 1 | 16.6 | 2 | ..... | .... | .... |
| *Saratoga Springs* | 12,409 | 28 | ..... | 5 | 17.8 | 6 | 350 | .... | 1 |
| Rest of district | 188,170 | 271 | 17.0 | 35 | 13.0 | 109 | 62 | 1 | 3 |
| **SOUTHERN TIER DISTRICT** | | | | | | | | | |
| Totals | 429,443 | 615 | 16.5 | 69 | 11.2 | 203 | 76 | 3 | 17 |
| BINGHAMTON | 39,647 | 76 | ..... | 6 | 8.0 | 20 | 158 | .... | 8 |
| *Owego* | 5,039 | 14 | ..... | 1 | 7.0 | 6 | ..... | .... | .... |
| Candor | 3,330 | 5 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Waverly* | 4,465 | 14 | ..... | 1 | 7.0 | 6 | ..... | .... | .... |
| ELMIRA | 35,672 | 83 | ..... | 11 | 13.2 | 21 | 74 | 1 | .... |

FOR JANUARY—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| ... | ... | ... | ... | ... | ... | 1 | ... | 5 | ... | ... | 1 | ... | 1 | ... | ... | ... | 2 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 3 | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | 1 | 1 | 1 | 1 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 3 | 2 | ... | 2 | ... | ... | 1 | ... | 1 | 2 | 1 |
| ... | ... | ... | 3 | ... | 3 | 11 | 6 | 76 | 41 | ... | 21 | 24 | 42 | 59 | 9 | 20 | 36 | 39 |
| ... | ... | 5 | 21 | 3 | 4 | 12 | 2 | 107 | 50 | 5 | 31 | 31 | 52 | 49 | 12 | 23 | 47 | 51 |
| ... | ... | ... | 9 | ... | ... | ... | ... | 11 | 9 | ... | 5 | 2 | 6 | 2 | 1 | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | 1 | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 5 | ... | ... | 1 | 1 | 1 | 1 | ... | ... | 1 | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | ... | ... | ... | ... | 1 | ... | 1 | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | 1 | ... | ... | ... | ... | 3 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | 3 | ... | ... | 1 | ... | 2 | ... | ... | ... | ... | 3 |
| ... | ... | ... | ... | ... | ... | 3 | ... | 2 | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | 1 | ... | ... | 4 | 3 | ... | 2 | 2 | 4 | 6 | 1 | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 5 | ... | ... |
| ... | ... | ... | 1 | ... | ... | ... | ... | 5 | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... |
| ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | 1 | ... | 3 | ... | ... | 3 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | 4 | 10 | 3 | 3 | 9 | 2 | 66 | 34 | 4 | 21 | 22 | 36 | 33 | 10 | 15 | 40 | 47 |
| 1 | ... | 1 | 5 | 2 | 8 | 14 | 5 | 166 | 46 | 2 | 29 | 34 | 72 | 80 | 26 | 15 | 63 | 72 |
| ... | ... | ... | 1 | ... | ... | 3 | 1 | 13 | 6 | ... | 4 | 2 | 3 | 3 | 1 | 1 | 2 | 10 |
| ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 11 | 3 | ... | ... | ... | 2 | 10 | 4 | 2 | 2 | 5 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 3 | 1 | 1 | 1 | 1 | ... | 2 | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 6 | 2 | ... | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 |
| 1 | ... | 1 | ... | ... | ... | 2 | ... | 6 | ... | ... | 2 | 1 | ... | ... | ... | 1 | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | 3 | 1 | 1 | ... | 1 | |
| ... | ... | ... | ... | 1 | 3 | 3 | 2 | 42 | 8 | 1 | 7 | 5 | 12 | 17 | 7 | ... | 8 | 16 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | 1 | ... | 6 | ... | ... | 2 | 2 | 7 | 3 | ... | ... | ... | 4 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 |
| ... | ... | ... | ... | ... | ... | 1 | ... | 2 | 2 | ... | ... | ... | ... | 1 | 1 | ... | 2 | 1 |
| ... | ... | ... | ... | ... | 1 | ... | ... | 4 | ... | ... | ... | ... | ... | 2 | ... | 1 | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | 1 | ... | 1 | 3 |
| ... | ... | ... | ... | ... | 1 | ... | ... | 6 | 4 | ... | 1 | 3 | 1 | 4 | ... | ... | 3 | 4 |
| ... | ... | ... | 3 | 1 | 3 | 4 | 2 | 62 | 19 | ... | 10 | 16 | 37 | 32 | 10 | 9 | 39 | 20 |
| 1 | ... | 2 | 2 | ... | 3 | 10 | 9 | 116 | 51 | 2 | 45 | 32 | 66 | 77 | 28 | 27 | 75 | 49 |
| ... | ... | ... | ... | ... | ... | 3 | 1 | 10 | 5 | 1 | 9 | 7 | 5 | 8 | 3 | 2 | 11 | 3 |
| ... | ... | ... | ... | ... | ... | ... | ... | 4 | 1 | ... | 1 | ... | 2 | 2 | 1 | ... | 3 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | 1 | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 3 | 3 | ... | ... | ... | 1 | 2 | 1 | 2 | 1 | 1 |
| ... | ... | ... | ... | ... | 1 | ... | ... | 24 | 9 | ... | 5 | 6 | 6 | 8 | 4 | 2 | 6 | 11 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 10 | ..... | 2 | 20.0 | 3 | ..... | .... | .... |
| HORNELLSVILLE | 12,000 | 17 | ..... | 0 | ..... | 5 | ..... | .... | .... |
| *Bath* | 5,000 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| CORNING | 11,061 | 17 | ..... | 2 | 12.0 | 3 | 175 | 1 | 1 |
| Wellsville | 5,000 | 10 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| OLEAN | 9,462 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Salamanca* | 4,251 | 8 | ..... | 2 | ..... | 0 | ..... | .... | .... |
| DUNKIRK | 11,616 | 15 | ..... | 2 | 13.3 | 4 | ..... | .... | .... |
| JAMESTOWN | 22,892 | 36 | ..... | 8 | 22.2 | 9 | 111 | .... | 1 |
| *Westfield* | 2,430 | 3 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| *Fredonia* | 4,127 | 4 | ..... | 1 | 25.0 | 2 | ..... | .... | .... |
| Rest of district | 248,500 | 297 | 14.1 | 32 | 11.0 | 115 | 84 | 1 | 7 |
| EAST CENTRAL DISTRICT Totals | 401,082 | 551 | 16.1 | 72 | 13.1 | 199 | 87 | 4 | 19 |
| SYRACUSE | 108,374 | 146 | 16.0 | 29 | ..... | 39 | 75 | 2 | 3 |
| *Baldwinsville* | 3,000 | 8 | ..... | 1 | 17.5 | 5 | ..... | .... | .... |
| De Witt | 5,435 | 8 | ..... | 1 | 14.2 | 2 | 125 | .... | 1 |
| CORTLAND | 9,014 | 21 | ..... | 3 | 14.3 | 7 | 380 | .... | 7 |
| *Homer* | 2,381 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Oneida* | 6,364 | 8 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Hamilton | 3,744 | 7 | ..... | 1 | 14.2 | 4 | ..... | .... | .... |
| Cazenovia | 3,830 | 3 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Brookfield | 2,726 | 7 | ..... | 0 | ..... | 3 | ..... | .... | 1 |
| *Norwich* | 5,766 | 17 | ..... | 4 | 23.5 | 6 | 58 | .... | .... |
| *Oneonta* | 7,147 | 16 | ..... | 0 | ..... | 5 | 62 | .... | .... |
| Worcester | 2,409 | 6 | ..... | 1 | 16.7 | 2 | 167 | .... | .... |
| *Cooperstown* | 2,368 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Walton | 4,869 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Delhi | 3,243 | 5 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Liberty | 4,568 | 6 | ..... | 1 | 20.0 | 0 | ..... | .... | .... |
| Rest of district | 225,844 | 291 | 14.5 | 31 | 10.7 | 115 | 400 | 2 | 7 |
| WEST CENTRAL DISTRICT Totals | 315,945 | 441 | 16.5 | 38 | 8.8 | 160 | 52 | .... | 11 |
| AUBURN | 30,345 | 34 | ..... | 8 | 23.5 | 5 | 88 | .... | 1 |
| ITHACA | 13,136 | 13 | ..... | 1 | 7.7 | 2 | 77 | .... | 1 |
| Hector | 4,137 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Waterloo* | 4,256 | 7 | ..... | 3 | ..... | 2 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| GENEVA | 10,433 | 20 | ..... | 3 | 15.0 | 7 | 100 | .... | .... |
| *Canandaigua* | 6,151 | 6 | ..... | 0 | ..... | 2 | 167 | .... | 1 |
| Manchester | 4,733 | 12 | ..... | 0 | ..... | 3 | 83 | .... | 1 |
| Phelps | 4,788 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Penn Yan* | 4,650 | 9 | ..... | 0 | ..... | 6 | ..... | .... | .... |
| *Batavia* | 9,180 | 14 | ..... | 1 | 7.0 | 2 | 70 | .... | 1 |
| *Dansville* | 3,633 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| *Le Roy* | 3,144 | 8 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Warsaw | 4,341 | 7 | ..... | 1 | 14.2 | 5 | ..... | .... | .... |
| Rest of district | 206,500 | 295 | 16.8 | 21 | 7.0 | 118 | 40 | .... | 6 |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 876,206 | 1,330 | 18.0 | 203 | 15.3 | 327 | 80 | 6 | 28 |
| BUFFALO | 352,387 | 531 | 17.6 | 144 | 27.1 | 96 | 100 | 2 | 11 |
| TONAWANDA | 7,421 | 9 | ..... | 2 | 22.2 | 1 | ..... | .... | .... |
| *Amherst* | 4,223 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |

JANUARY—(*Continued*)

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | 1 | .... | .... | 2 | .... | .... | 1 | 3 |
| .... | .... | .... | .... | .... | .... | .... | 5 | 2 | .... | 3 | .... | 2 | 2 | 1 | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | 2 | 1 |
| .... | 1 | .... | .... | .... | .... | .... | 4 | 1 | .... | 3 | .... | 1 | 3 | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 1 | 1 | 2 | 2 | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | 1 | 1 | .... | 1 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 4 | .... | .... | 2 | 2 | 1 | 1 | 1 | .... | 2 | 3 |
| .... | .... | .... | .... | 1 | .... | 2 | 4 | 2 | 1 | .... | 5 | 4 | 3 | 4 | 2 | 3 | 4 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 3 | .... | 1 | .... | .... |
| .... | 1 | 2 | .... | 1 | 6 | 6 | 53 | 24 | .... | 18 | 10 | 41 | 37 | 11 | 15 | 42 | 21 |
| .... | .... | 7 | 2 | 3 | 6 | 5 | 85 | 43 | 2 | 45 | 31 | 70 | 70 | 26 | 19 | 69 | 43 |
| .... | .... | .... | 1 | 1 | 3 | 1 | 17 | 17 | 1 | 15 | 11 | 19 | 17 | 3 | 2 | 17 | 15 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | 4 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | 1 | .... | 1 | .... | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | 1 | 8 | 2 | 1 | .... | .... | .... | 1 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 2 | .... | .... | 2 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | 1 | .... | 1 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | .... | .... | .... | 1 | 1 | .... | 1 | .... |
| .... | .... | 1 | .... | .... | .... | .... | 3 | 1 | .... | .... | .... | 1 | 4 | 2 | .... | 2 | 3 |
| .... | .... | 1 | .... | .... | .... | .... | 4 | .... | .... | 1 | 1 | 2 | .... | 1 | 2 | 3 | 1 |
| .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | .... | .... | 1 | .... | 1 | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | .... | .... | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | .... | .... | .... | 1 | .... | 1 | .... | .... |
| .... | .... | 5 | 1 | 2 | 2 | 3 | 42 | 20 | .... | 27 | 18 | 42 | 41 | 18 | 11 | 31 | 17 |
| .... | 1 | 1 | 1 | 3 | 5 | 1 | 93 | 28 | 3 | 20 | 31 | 63 | 63 | 22 | 19 | 40 | 36 |
| .... | .... | .... | .... | .... | 2 | .... | 9 | 3 | .... | 2 | 2 | 2 | 1 | 1 | 2 | 3 | 6 |
| .... | .... | .... | .... | .... | .... | .... | 3 | 2 | 1 | 1 | 2 | 2 | .... | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | 2 | .... | .... | 2 | 3 | .... | 1 | 4 | 5 | 1 | .... | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 1 | 1 | .... | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 2 | 1 | 1 | .... | 1 | 2 | 1 | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | 2 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | 2 | .... | 1 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 2 | 5 | .... | .... | 1 | 1 | 2 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | 1 | .... | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | 5 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | 1 | 1 | .... | .... | 2 | 1 |
| .... | 1 | 1 | 1 | 1 | 3 | 1 | 69 | 11 | 1 | 14 | 16 | 42 | 49 | 18 | 12 | 27 | 22 |
| .... | 9 | 9 | 6 | 9 | 20 | 23 | 266 | 113 | 12 | 100 | 55 | 144 | 154 | 56 | 87 | 91 | 142 |
| .... | 6 | .... | 4 | 5 | 11 | 15 | 123 | 46 | 7 | 34 | 15 | 50 | 51 | 21 | 23 | 34 | 73 |
| .... | .... | .... | .... | .... | .... | .... | 2 | 1 | .... | .... | .... | .... | 1 | .... | 1 | 1 | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*) | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 10 | ..... | 4 | 40.0 | 2 | ..... | .... | .... |
| LOCKPORT | 16,581 | 25 | ..... | 2 | 8.0 | 9 | 40 | .... | .... |
| NIAGARA FALLS | 19,457 | 32 | ..... | 7 | 21.9 | 4 | 125 | 1 | 2 |
| *Medina* | 4,716 | 11 | ..... | 1 | 9.0 | 3 | ..... | .... | .... |
| *Albion* | 4,477 | 10 | ..... | 1 | 10.0 | 5 | 100 | .... | 1 |
| *Brockport* | 3,400 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| ROCHESTER | 162,608 | 261 | 18.8 | 65 | 25.0 | 48 | 77 | 1 | 5 |
| Palmyra | 3,758 | 8 | ..... | 0 | ..... | 5 | 125 | .... | .... |
| *Newark* | 4,578 | 5 | ..... | 0 | ..... | 2 | 200 | .... | 1 |
| Lyons | 5,824 | 11 | ..... | 2 | 18.0 | 4 | 90 | .... | .... |
| *Clyde* | 2,507 | 4 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| OSWEGO | 22,200 | 30 | ..... | 6 | 20.0 | ..... | 133 | .... | 2 |
| *Fulton* | 5,281 | 8 | ..... | 2 | 25.0 | 1 | ..... | .... | .... |
| Richland | 3,535 | 11 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Rest of district | 247,000 | 358 | 17.0 | 67 | 18.7 | 142 | 65 | 2 | 6 |
| Totals for the state | 7,268,000 | 12,524 | 20.0 | 2,557 | 20.5 | 2,570 | 84 | 38 | 192 |
| Average for past five years | ..... | 10,470 | 18.4 | 2,704 | 25.8 | ..... | 95 | 41 | 127 |

REMARKS—Smallpox has spread considerably during the month, having developed at Sharon Springs, Cherry Valley and vicinity; Watertown and vicinity; Glens Falls and vicinity; Syracuse, Herkimer, Mohawk and Starkville; Waterford, Ballston Spa,

JANUARY—(*Concluded*)

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 3 | .... | 2 | .... | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | 1 | .... | .... | 3 | 3 | .... | 1 | 2 | 8 | 1 | 3 | .... | 2 | 1 |
| .... | .... | .... | .... | .... | 1 | .... | 3 | 5 | .... | 3 | 1 | 1 | 6 | 2 | 5 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | 1 | 1 | 1 | 1 | .... | .... | .... | 3 |
| .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | 1 | 1 | .... | 1 | .... | | 3 | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | 1 | .... | .... | 1 | .... | 1 | .... |
| .... | 1 | 7 | 1 | .... | 3 | 2 | 53 | 28 | 4 | 15 | 9 | 19 | 37 | 17 | 39 | 10 | 10 |
| .... | 1 | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 1 | .... | 1 | .... | 3 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 2 | 1 |
| .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 2 | 2 | .... | 4 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | .... | 2 | .... | .... |
| .... | .... | .... | .... | 2 | .... | .... | 2 | 1 | .... | 3 | 2 | 11 | 3 | 1 | .... | .... | 3 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | 3 | 1 | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | 1 | 3 | .... | .... | 2 | 2 |
| .... | 1 | 2 | 1 | 1 | 4 | 6 | 72 | 21 | .... | 35 | 19 | 46 | 45 | 10 | 15 | 30 | 42 |
| 10 | 108 | 59 | 33 | 56 | 345 | 196 | 2,770 | 1,326 | 98 | 629 | 877 | 1,114 | 1,223 | 440 | 544 | 648 | 1,804 |
| 1 | 92 | 117 | 33 | 66 | 387 | 115 | 1,118 | 1,138 | 92 | 654 | 748 | 999 | 1,104 | 341 | 488 | 562 | 1,305 |

a case; and one or two cases each at Hudson, Fishkill, Peekskill, Mt. Vernon, te Plains, Southold, and one at Niagara Falls.

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| MARITIME DISTRICT Totals | 3,852,922 | 5,934 | 20.0 | 1,668 | 28.0 | 683 | 111 | 13 | 40 |
| CITY OF NEW YORK Totals | 3,536,517 | 5,489 | 20.2 | 1,562 | 28.5 | 577 | 106 | 12 | 36 |
| BOROUGH OF MANHATTAN | 1,873,562 | 2,916 | 20.3 | 882 | 30.0 | 264 | 100 | 9 | 18 |
| BOROUGH OF THE BRONX | 222,124 | 371 | 22.0 | 109 | 29.5 | 37 | 178 | .... | 1 |
| BOROUGH OF BROOKLYN | 1,209,064 | 1,871 | 20.0 | 499 | 26.7 | 229 | 109 | 3 | 15 |
| BOROUGH OF QUEENS | 162,834 | 226 | 17.8 | 54 | 24.0 | 22 | 45 | .... | 1 |
| BOROUGH OF RICHMOND | 68,933 | 105 | 20.0 | 18 | 17.2 | 25 | 58 | .... | 1 |
| Oyster Bay | 16,334 | 20 | ..... | 5 | 25.0 | 5 | 50 | .... | 1 |
| Hempstead | 27,066 | 34 | ..... | 11 | 33.0 | 8 | 235 | .... | .... |
| North Hempstead | 12,048 | 16 | ..... | 2 | 12.5 | 2 | 125 | .... | 1 |
| Southold | 8,301 | 10 | ..... | 3 | 30.0 | 3 | 200 | .... | .... |
| *Sag Harbor* | 2,000 | 9 | ..... | 3 | 33.3 | 2 | 333 | .... | .... |
| Huntington | 9,483 | 16 | ..... | 2 | 12.5 | 7 | 62 | .... | .... |
| Brookhaven | 14,592 | 16 | ..... | 3 | 20 0 | 8 | 68 | .... | 1 |
| YONKERS | 47,931 | 77 | ..... | 27 | 35.0 | 14 | 40 | .... | 1 |
| Greenburgh | 15,564 | 22 | ..... | 8 | 36 4 | 3 | 227 | .... | ... |
| MOUNT VERNON | 20,346 | 24 | ..... | 9 | 37.5 | 3 | ..... | .... | .... |
| *Port Chester* | 7,440 | 1 | ..... | 0 | - | 1 | ..... | .... | .... |
| *Ossining* | 7,939 | 13 | ..... | 2 | 15.2 | 3 | 152 | .... | .... |
| NEW ROCHELLE | 14,720 | 13 | ..... | 1 | 7.7 | 2 | ..... | .... | .... |
| *Peekskill* | 10,358 | 12 | ..... | 0 | ..... | 4 | 85 | ... | .... |
| *White Plains* | 7,900 | 16 | ..... | 4 | 25.0 | 3 | 250 | 1 | .... |
| Rest of district | 85,000 | 146 | 22.4 | 26 | ..... | 38 | ..... | .... | .... |
| HUDSON VALLEY DISTRICT Totals | 688,393 | 1,143 | 21.3 | 173 | 15.0 | 316 | 58 | 4 | 20 |
| ALBANY | 94,151 | 157 | 21.5 | 33 | 21.0 | 22 | 45 | .... | 3 |
| COHOES | 23,910 | 40 | ..... | 15 | 37.5 | 6 | 175 | .... | 3 |
| TROY (including *Lansingburgh*) | 73,250 | 150 | 26.5 | 25 | 16.7 | 34 | 73 | 1 | 4 |
| WATERVLIET | 14,321 | 22 | ..... | 7 | 28.0 | 4 | 40 | .... | 1 |
| *Green Island* | 4,770 | 7 | ..... | 1 | 14.2 | 3 | 142 | .... | .... |
| *Hoosick Falls* | 5,671 | 7 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| RENSSELAER | 7,466 | 15 | ..... | 3 | 20.0 | 5 | 67 | .... | 1 |
| Coxsackie | 4,102 | 9 | ..... | 2 | 22 2 | 3 | ..... | .... | .... |
| *Catskill* | 5,486 | 11 | ..... | 3 | 27.2 | 2 | ..... | .... | .... |
| HUDSON | 9,528 | 13 | ..... | 3 | 23.0 | 5 | .... | .... | .... |
| KINGSTON | 24,535 | 42 | ..... | 10 | 23.8 | 11 | 143 | ... | .... |
| *Ellenville* | 3,000 | 6 | ..... | 1 | 16.7 | 3 | 167 | .... | .... |
| Marbletown | 3,511 | 9 | ..... | 2 | 22.2 | 2 | ..... | .... | .... |
| Rosendale | 6,278 | 7 | ..... | 2 | 28.5 | 2 | 285 | 1 | .... |
| Esopus | 4,907 | 6 | ..... | 1 | 16.7 | 1 | 167 | .... | .... |
| *Saugerties* | 3,697 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| POUGHKEEPSIE | 24,029 | 43 | ..... | 6 | 14.0 | 8 | 23 | .... | .... |
| Fishkill | 13,016 | 13 | ..... | 2 | 16.7 | 3 | 87 | ... | .... |
| *Wappingers Falls* | 3,504 | 3 | ..... | 0 | ..... | 0 | ..... | ... | .... |
| NEWBURGH | 25,000 | 35 | ..... | 4 | 11.5 | 8 | ..... | ... | .... |
| *Port Jervis* | 9,385 | 14 | ..... | 0 | ..... | 5 | ..... | ... | .... |
| MIDDLETOWN | 14,522 | 14 | ..... | 2 | 14.2 | 3 | 71 | ... | .... |
| Warwick | 6,403 | 5 | ..... | 2 | 40.9 | 0 | 200 | ... | .... |
| Goshen | 4,564 | 9 | ..... | 1 | 11.1 | 3 | 111 | ... | .... |

## ɛK STATE DEPARTMENT OF HEALTH

### *ricts, cities, villages and towns during February*, 1901

**ges in *italic* and towns in roman type]**

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 32 | 103 | 29 | 31 | 23 | 173 | 160 | 1,149 | 749 | 72 | 273 | 536 | 520 | 488 | 189 | 250 | 126 | 970 |
| 32 | 103 | 25 | 29 | 19 | 166 | 149 | 1,060 | 702 | 69 | 244 | 509 | 463 | 428 | 181 | 233 | 104 | 917 |
| 4 | 48 | 3 | 18 | 12 | 90 | 90 | 537 | 349 | 41 | 145 | 263 | 282 | 220 | 98 | 141 | 55 | 490 |
| 28 | 13 | 5 | 1 | ... | 9 | 7 | 52 | 91 | 1 | 7 | 23 | 22 | 25 | 15 | 14 | 3 | 52 |
| ... | 40 | 16 | 8 | 6 | 60 | 52 | 385 | 219 | 24 | 80 | 187 | 139 | 148 | 52 | 61 | 37 | 336 |
| ... | 2 | ... | 2 | ... | 4 | ... | 56 | 29 | 3 | 11 | 24 | 14 | 24 | 9 | 12 | 2 | 33 |
| ... | ... | 1 | ... | 1 | 3 | ... | 30 | 14 | ... | 1 | 12 | 6 | 11 | 7 | 5 | 7 | 6 |
| ... | ... | ... | ... | ... | ... | ... | 4 | 1 | ... | 1 | 1 | 3 | 2 | ... | 5 | 1 | 1 |
| ... | ... | ... | ... | ... | 2 | ... | 13 | 2 | ... | 1 | 3 | 3 | 5 | ... | 1 | 1 | 3 |
| ... | ... | ... | ... | ... | 1 | ... | 1 | 4 | 1 | ... | ... | 3 | 3 | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | 2 | 2 | ... | ... | ... | 1 | ... | 1 | ... | ... | 1 | 3 |
| ... | ... | ... | ... | ... | ... | 3 | ... | 2 | ... | ... | ... | 2 | 1 | ... | 1 | ... | ... |
| ... | ... | ... | ... | ... | ... | 1 | 4 | ... | ... | 1 | 1 | 3 | 2 | 1 | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | 4 | 2 | ... | ... | 2 | 2 | ... | 1 | ... | 2 | 6 |
| ... | ... | ... | ... | ... | 1 | 1 | 10 | 11 | ... | 9 | 4 | 6 | 12 | 1 | 3 | 2 | 13 |
| ... | ... | 4 | ... | ... | 1 | ... | 2 | ... | ... | 4 | 1 | 2 | 4 | ... | ... | 1 | 5 |
| ... | ... | ... | ... | ... | ... | ... | 6 | 4 | 1 | ... | 2 | 3 | 3 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 |
| ... | ... | ... | 1 | ... | 1 | ... | ... | 3 | ... | 1 | 1 | 2 | 1 | ... | 2 | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 5 | 1 | ... | ... | ... | 2 | 2 | 2 | 1 | ... | ... |
| ... | ... | ... | 1 | ... | ... | ... | 2 | 2 | ... | 2 | ... | 2 | 1 | ... | ... | 1 | 3 |
| ... | ... | ... | ... | 3 | ... | ... | 6 | 1 | ... | ... | 1 | 1 | 2 | ... | ... | 1 | ... |
| ... | ... | ... | ... | 1 | 1 | 4 | 30 | 14 | 1 | 10 | 10 | 23 | 21 | 3 | 4 | 11 | 11 |
| ... | 7 | 1 | 4 | 3 | 19 | 9 | 250 | 86 | 15 | 81 | 65 | 132 | 161 | 33 | 37 | 90 | 122 |
| ... | ... | ... | ... | ... | 4 | ... | 38 | 12 | ... | 13 | 16 | 25 | 21 | 7 | 6 | 3 | 10 |
| ... | ... | ... | ... | ... | ... | 4 | 5 | 4 | ... | 4 | ... | 3 | 6 | 1 | 1 | 2 | 7 |
| ... | ... | ... | ... | 2 | 3 | 1 | 39 | 18 | 3 | 6 | 4 | 12 | 19 | 7 | 1 | 13 | 17 |
| ... | ... | ... | ... | ... | ... | ... | 8 | 2 | ... | 3 | 2 | 2 | 1 | 1 | ... | 1 | 4 |
| ... | ... | ... | ... | ... | 1 | ... | 2 | ... | ... | 1 | ... | 2 | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | 3 | ... | ... | ... | ... | ... | 3 | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 5 | 1 | 1 | ... | 2 | ... | ... | ... | ... | 2 | 3 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | 1 | 4 | ... | 1 | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 5 | 1 | ... | ... | ... | ... | 2 | ... | 2 | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 2 | 2 | 2 | ... | ... | ... | 3 | 2 |
| ... | 4 | ... | ... | ... | 2 | ... | 5 | 3 | ... | 5 | 1 | 6 | 7 | ... | 1 | ... | 8 |
| ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | 2 | ... | 1 | 1 | ... | ... | 3 | 1 | 1 | ... | ... |
| ... | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | 2 |
| ... | 1 | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | 2 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | 1 | ... | 14 | 4 | ... | 2 | 3 | 4 | 4 | 2 | 3 | 2 | 4 |
| ... | ... | ... | 1 | ... | ... | ... | 2 | 1 | ... | 1 | 1 | 3 | 2 | ... | ... | 2 | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 5 | 4 | ... | 4 | 6 | 4 | 4 | ... | 1 | 2 | 5 |
| ... | ... | ... | ... | ... | ... | ... | 4 | ... | 1 | 2 | ... | 1 | 1 | ... | 1 | 4 | ... |
| ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | ... | 1 | ... | 3 | ... | 1 | 2 | 1 | 3 |
| ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | 1 | 1 |
| ... | ... | ... | ... | ... | 1 | ... | ... | 2 | ... | ... | ... | 1 | 1 | ... | 2 | 1 | 1 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| HUDSON VALLEY DIST.—(*Con.*) | | | | | | | | | |
| Montgomery | 5,939 | 6 | ..... | 1 | 16.7 | 1 | 333 | 1 | .... |
| Haverstraw | 9,874 | 19 | ..... | 4 | 21.0 | 1 | 52 | .... | .... |
| *Nyack* | 4,275 | 8 | ..... | 3 | 37.5 | 2 | ..... | .... | 1 |
| Ramapo | 7,502 | 15 | ..... | 2 | 13.3 | 4 | ..... | .... | .... |
| Rest of district | 271,800 | 452 | 21.8 | 48 | 10.6 | 172 | 45 | 1 | 7 |
| ADIRONDACK AND NORTH'N DISTRICT Totals | 394,762 | 560 | 18.5 | 90 | 16.3 | 182 | 113 | 3 | 11 |
| WATERTOWN | 21,700 | 36 | ..... | 8 | 22.2 | 14 | 140 | .... | 2 |
| Ellisburgh | 3,888 | 6 | ..... | 0 | ..... | 2 | 166 | .... | .... |
| Cape Vincent | 2,882 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Clayton | 4,313 | 8 | ..... | 1 | 12.5 | 5 | ..... | .... | .... |
| OGDENSBURGH | 12,633 | 16 | ..... | 3 | 18.5 | 6 | ..... | .... | .... |
| Gouverneur | 6,000 | 15 | ..... | 3 | 20.0 | 2 | 267 | .... | 1 |
| *Potsdam* | 3,843 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Canton | 6,387 | 10 | ..... | 0 | ..... | 4 | 100 | .... | 1 |
| *Malone* | 5,935 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Plattsburgh* | 8,434 | 8 | ..... | 1 | ..... | 1 | ..... | .... | .... |
| *Glens Falls* | 12,613 | 23 | ..... | 3 | 13.0 | 4 | 87 | .... | .... |
| *Whitehall* | 4,377 | 2 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Fort Edward | 5,216 | 9 | ..... | 1 | 11.1 | 2 | 111 | 1 | .... |
| *Sandy Hill* | 4,473 | 2 | ..... | 1 | 50.0 | 0 | 500 | .... | .... |
| Granville | 5,217 | 6 | ..... | 2 | 33.3 | 1 | ..... | .... | .... |
| Greenwich | 4,172 | 7 | ..... | 1 | 14.3 | 4 | ..... | .... | .... |
| Lowville | 3,746 | 7 | ..... | 2 | 28.5 | 3 | 142 | .... | .... |
| Rest of district | 278,943 | 404 | 18.0 | 63 | 15.8 | 133 | 110 | 2 | 7 |
| MOHAWK VALLEY DISTRICT Totals | 408,974 | 572 | 16.4 | 85 | 16.0 | 188 | 75 | 2 | 4 |
| SCHENECTADY | 31,682 | 51 | ..... | 16 | 32.0 | 10 | 20 | .... | .... |
| Cobleskill | 3,973 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| AMSTERDAM | 20,929 | 25 | ..... | 5 | 20.0 | 4 | 120 | .... | 1 |
| *Fort Plain* | 2,444 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| JOHNSTOWN | 10,130 | 10 | ..... | 2 | 20.0 | 2 | ..... | .... | .... |
| GLOVERSVILLE | 18,349 | 23 | ..... | 1 | 4.5 | 7 | 43 | 1 | .... |
| LITTLE FALLS | 10,381 | 18 | ..... | 5 | 27.8 | 2 | 222 | .... | .... |
| *Herkimer* | 5,555 | 5 | ..... | 1 | 20.0 | 4 | 200 | .... | .... |
| *Ilion* | 5,138 | 7 | ..... | 1 | 14.2 | 2 | 142 | .... | .... |
| UTICA | 56,383 | 88 | ..... | 15 | 17.0 | 20 | 91 | .... | .... |
| Whitestown | 6,235 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| ROME | 15,343 | 30 | ..... | 3 | 10.0 | 7 | ..... | .... | .... |
| Boonville | 3,332 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Camden | 3,745 | 4 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Waterford | 6,157 | 10 | ..... | 2 | 20.0 | 5 | 200 | .... | 1 |
| *Mechanicville* | 4,695 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| *Ballston Spa* | 3,923 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Saratoga Springs* | 12,409 | 17 | ..... | 2 | 13.8 | 7 | 70 | .... | 1 |
| Rest of district | 188,170 | 266 | 18.0 | 30 | 11.4 | 111 | 61 | 1 | 1 |
| SOUTHERN TIER DISTRICT Totals | 429,443 | 590 | 17.8 | 81 | 14.0 | 165 | 61 | 3 | 12 |
| BINGHAMTON | 39,647 | 68 | ..... | 9 | 13.2 | 13 | 191 | .... | 3 |
| *Owego* | 5,039 | 10 | ..... | 1 | 10.0 | 2 | ..... | .... | .... |
| Candor | 3,330 | 6 | ..... | 1 | 16.7 | 4 | 167 | 1 | .... |
| *Waverly* | 4,465 | 7 | ..... | 1 | 14.2 | 2 | 142 | .... | 1 |
| ELMIRA | 35,672 | 47 | ..... | 10 | 21.3 | 11 | 42 | .... | .... |

EBRUARY—(*Continued*)

| YMOTIC DISEASES | | | | | | OTHER CAUSES OF DEATH | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | 1 | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | 1 | 3 | 6 | 1 | 4 | .... | 2 |
| .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | .... | .... | 1 | 1 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | 1 | 4 | 1 | .... | 1 | .... | 3 | .... | 1 | 4 | .... |
| 1 | 1 | 2 | .... | 4 | 3 | 101 | 26 | 6 | 35 | 24 | 57 | 67 | 11 | 10 | 50 | 45 |
| 9 | 14 | 3 | 1 | 12 | 6 | 125 | 43 | 3 | 41 | 21 | 72 | 50 | 17 | 8 | 60 | 58 |
| .... | 1 | 1 | .... | .... | .... | 11 | .... | .... | 1 | 3 | 4 | 2 | .... | .... | 6 | 4 |
| .... | 1 | .... | .... | .... | .... | 3 | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | 1 | 1 | 1 | .... | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | 6 | 2 | .... | 2 | 1 | 2 | 1 | 1 | .... | .... | 1 |
| 2 | .... | .... | .... | 1 | .... | 5 | .... | .... | 1 | .... | .... | 1 | 1 | .... | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 3 | .... | 2 | .... | 1 | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 2 | .... | .... | .... | .... | 1 | 3 | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 |
| 2 | .... | .... | .... | .... | .... | 4 | 2 | .... | 2 | 1 | 7 | 3 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 2 | 1 | 1 | 1 | .... | .... | .... | 1 | .... | 1 | 1 |
| 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 1 | .... | 1 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | .... | 1 | 2 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | 3 | 1 |
| 2 | 12 | 2 | 1 | 11 | 4 | 84 | 35 | 1 | 29 | 14 | 55 | 37 | 10 | 8 | 43 | 45 |
| .... | 10 | 3 | 5 | 12 | 2 | 138 | 58 | 2 | 50 | 30 | 61 | 63 | 22 | 18 | 40 | 52 |
| .... | .... | .... | .... | 1 | .... | 19 | 7 | .... | 5 | 3 | 1 | 5 | 1 | 2 | 2 | 5 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... |
| .... | .... | .... | .... | 2 | .... | 4 | 3 | .... | .... | .... | 5 | 3 | 3 | 2 | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | 1 | 1 | 1 | .... | 1 | .... | 1 | 2 |
| .... | .... | .... | .... | .... | .... | 2 | 3 | .... | 4 | 1 | 3 | 5 | .... | .... | 3 | 1 |
| .... | .... | 1 | .... | 3 | .... | 6 | 2 | .... | .... | 3 | 3 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 1 | .... | 1 | .... | 1 | .... | .... | .... |
| .... | 1 | .... | .... | .... | .... | 2 | 2 | .... | .... | .... | 1 | .... | .... | .... | 1 | .... |
| .... | 1 | .... | 4 | 3 | .... | 13 | 16 | .... | 8 | 7 | 9 | 11 | 3 | 4 | 2 | 7 |
| .... | .... | .... | .... | .... | .... | 2 | 2 | .... | 1 | .... | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 3 | 3 | .... | 5 | 2 | 6 | 1 | .... | 3 | 1 | 6 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | 1 | 2 | .... | .... | .... | 1 | 2 | .... | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | 2 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 3 | 1 | .... | 3 | 1 | 3 | 2 | .... | .... | 1 | 2 |
| .... | 8 | 2 | 1 | 3 | .... | 77 | 18 | 1 | 21 | 11 | 25 | 33 | 12 | 4 | 25 | 23 |
| 1 | .... | 4 | 3 | 5 | 6 | 134 | 35 | .... | 26 | 48 | 52 | 82 | 22 | 26 | 67 | 62 |
| 1 | .... | 3 | .... | 2 | .... | 10 | 4 | .... | 5 | 5 | 7 | 12 | 1 | 5 | 7 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | 2 | .... | 1 | 3 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | 2 | 1 | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... |
| .... | .... | .... | 1 | .... | 1 | 8 | 3 | .... | 1 | 5 | 7 | 8 | 1 | 2 | 2 | 8 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 2 | ..... | 1 | 50.0 | 1 | ..... | .... | .... |
| HORNELLSVILLE | 12,000 | 11 | ..... | 2 | 18.2 | 3 | ..... | .... | .... |
| *Bath* | 5,000 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| CORNING | 11,061 | 17 | ..... | 6 | 35.3 | 2 | ..... | .... | .... |
| Wellsville | 5,000 | 8 | ..... | 1 | 12.5 | 4 | ..... | .... | .... |
| OLEAN | 9,462 | 8 | ..... | 3 | 37.5 | 2 | ..... | .... | .... |
| *Salamanca* | 4,251 | 6 | ..... | 4 | 66.6 | 1 | 167 | .... | .... |
| DUNKIRK | 11,616 | 14 | ..... | 3 | 21.4 | 4 | 142 | .... | .... |
| JAMESTOWN | 22,892 | 27 | ..... | 4 | 14.7 | 5 | 75 | 1 | 1 |
| *Westfield* | 2,430 | 5 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Fredonia* | 4,127 | 8 | ..... | 3 | 37.5 | 2 | ..... | .... | .... |
| Rest of district | 248,500 | 344 | 17.8 | 32 | 9.5 | 108 | 48 | 1 | 7 |
| EAST CENTRAL DISTRICT Totals | 401,082 | 586 | 19.0 | 85 | 14.3 | 213 | 57 | 1 | 10 |
| SYRACUSE | 108,374 | 141 | 17.0 | 26 | 18.5 | 29 | 43 | .... | 1 |
| *Baldwinsville* | 3,000 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| De Witt | 5,435 | 7 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| CORTLAND | 9,014 | 14 | ..... | 4 | 28 5 | 3 | 70 | .... | 1 |
| *Homer* | 2,381 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Oneida* | 6,364 | 11 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Hamilton | 3,744 | 10 | ..... | 0 | ..... | 5 | 100 | .... | .... |
| Cazenovia | 3,830 | 6 | ..... | 1 | ..... | 1 | ..... | .... | .... |
| Brookfield | 2,726 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| *Norwich* | 5,766 | 13 | ..... | 0 | ..... | 8 | 75 | .... | .... |
| *Oneonta* | 7,147 | 9 | ..... | 2 | 22.2 | 2 | 111 | .... | .... |
| Worcester | 2,409 | 6 | ..... | 1 | 16.7 | 4 | 167 | .... | 1 |
| *Cooperstown* | 2,368 | 4 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Walton | 4,869 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Delhi | 3,243 | 3 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Liberty | 4,568 | 8 | ..... | 0 | ..... | 7 | ..... | .... | .... |
| Rest of district | 225,844 | 348 | 20 0 | 50 | 14.1 | 143 | 63 | 1 | 7 |
| WEST CENTRAL DISTRICT Totals | 315,945 | 525 | 19.3 | 53 | 10.2 | 224 | 33 | 4 | 5 |
| AUBURN | 30,345 | 42 | ..... | 5 | 12.0 | 11 | 60 | 1 | .... |
| ITHACA | 13,136 | 26 | ..... | 2 | 7.7 | 9 | 77 | .... | .... |
| Hector | 4,137 | 6 | ..... | 2 | 33.3 | 4 | ..... | .... | .... |
| *Waterloo* | 4,256 | 8 | ..... | 1 | 12.5 | 5 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 9 | ..... | 0 | ..... | 1 | 222 | .... | 2 |
| GENEVA | 10,433 | 19 | ..... | 3 | 15.7 | 9 | ..... | .... | .... |
| *Canandaigua* | 6,151 | 17 | ..... | 2 | 11.8 | 5 | ..... | .... | .... |
| Manchester | 4,733 | 9 | ..... | 1 | 14.2 | 5 | 142 | 1 | .... |
| Phelps | 4,788 | 4 | ..... | 1 | 25.0 | 2 | ..... | .... | .... |
| *Penn Yan* | 4,650 | 6 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Batavia* | 9,180 | 15 | ..... | 3 | 20.0 | 6 | ..... | .... | .... |
| *Dansville* | 3,633 | 8 | ..... | 1 | 12.5 | 4 | ..... | .... | .... |
| *Le Roy* | 3,144 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Warsaw | 4,341 | 7 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Rest of district | 206,500 | 344 | 20.7 | 37 | 9.4 | 154 | 33 | 2 | 3 |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 876,206 | 1,112 | 19.5 | 247 | 22.6 | 617 | 72 | 11 | 13 |
| BUFFALO | 352,387 | 394 | 14.5 | 131 | 33.3 | 393 | 107 | 6 | 7 |
| TONAWANDA | 7,421 | 5 | ..... | 2 | 40.0 | 0 | ..... | .... | .... |
| *Amherst* | 4,223 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |

## FEBRUARY—(*Continued*)

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 3 | 1 | .... | .... | .... | 2 | 2 | .... | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 6 | 4 | .... | 1 | .... | 1 | 2 | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | 2 | .... | .... | .... | 2 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | 4 |
| .... | .... | .... | .... | .... | 1 | .... | 2 | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | 3 | .... | .... | 1 | 1 | .... | 3 | 2 |
| .... | .... | .... | .... | .... | .... | 1 | 6 | 3 | .... | .... | 3 | 3 | 4 | 1 | .... | .... | 5 |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | 2 | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | .... | .... | 2 | 2 | .... | .... | .... | .... |
| .... | .... | .... | 1 | 2 | 2 | 3 | 88 | 16 | .... | 14 | 32 | 26 | 43 | 16 | 16 | 43 | 34 |
| .... | 2 | 8 | 3 | 2 | 5 | 2 | 130 | 39 | 7 | 39 | 38 | 66 | 70 | 24 | 16 | 72 | 53 |
| .... | 1 | .... | 1 | 1 | 2 | .... | 25 | 14 | 2 | 10 | 12 | 24 | 21 | 7 | 3 | 10 | 10 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | 1 | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | 1 | .... | 3 | .... | 2 | 2 | 3 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 3 | 2 | .... | 2 | .... | 1 | .... | .... | .... | 2 | 1 |
| .... | .... | 1 | .... | .... | .... | .... | 3 | 1 | .... | 1 | .... | .... | 1 | .... | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | .... | 1 | 1 | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | 1 | 3 | 2 | .... | 1 | .... | 2 | 1 | 1 | 1 | 1 | .... |
| .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | 3 | 1 | .... | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 2 | .... | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 1 | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | .... | 1 | .... | .... | .... | 2 | 2 |
| .... | 1 | 6 | 2 | 1 | 3 | 1 | 86 | 18 | 5 | 21 | 22 | 35 | 37 | 14 | 7 | 47 | 34 |
| .... | .... | 2 | 2 | 3 | 3 | 1 | 114 | 36 | 5 | 30 | 33 | 72 | 75 | 13 | 15 | 62 | 50 |
| .... | .... | .... | .... | .... | .... | .... | 10 | 5 | .... | 3 | 2 | 3 | 8 | 1 | 4 | 3 | 2 |
| .... | .... | .... | .... | 2 | .... | .... | 9 | 2 | 1 | 1 | 3 | 3 | 2 | .... | .... | 1 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | 2 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | .... | 1 | 2 | .... | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 2 | 1 | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 6 | 3 | .... | 1 | .... | 5 | 1 | .... | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 4 | 2 | .... | .... | .... | 2 | 3 | .... | .... | 3 | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 4 | .... | .... | 3 | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | .... | 1 | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 6 | 1 | 1 | .... | 1 | 1 | 2 | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | 4 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | 2 | 1 | .... | .... | 1 | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 3 | .... | 1 | 2 | .... |
| .... | .... | 2 | 2 | 1 | 3 | 1 | 70 | 21 | 3 | 23 | 20 | 51 | 43 | 11 | 7 | 44 | 37 |
| .... | 4 | 10 | 4 | 12 | 11 | 14 | 252 | 84 | 10 | 74 | 61 | 120 | 146 | 51 | 33 | 83 | 120 |
| .... | 4 | .... | 3 | 7 | 8 | 7 | 94 | 36 | 3 | 22 | 22 | 31 | 45 | 15 | 14 | 24 | 46 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| **SOUTHERN TIER DIST.—(*Con.*)** | | | | | | | | | |
| Horseheads | 4,944 | 2 | ..... | 1 | 50.0 | 1 | ..... | .... | .... |
| HORNELLSVILLE | 12,000 | 11 | ..... | 2 | 18.2 | 3 | ..... | .... | .... |
| *Bath* | 5,000 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| CORNING | 11,061 | 17 | ..... | 6 | 35.3 | 2 | ..... | .... | .... |
| Wellsville | 5,000 | 8 | ..... | 1 | 12.5 | 4 | ..... | .... | .... |
| OLEAN | 9,462 | 8 | ..... | 3 | 37.5 | 2 | ..... | .... | .... |
| *Salamanca* | 4,251 | 6 | ..... | 4 | 66.6 | 1 | 167 | .... | .... |
| DUNKIRK | 11,616 | 14 | ..... | 3 | 21.4 | 4 | 142 | .... | .... |
| JAMESTOWN | 22,892 | 27 | ..... | 4 | 14.7 | 5 | 75 | 1 | 1 |
| *Westfield* | 2,430 | 5 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Fredonia* | 4,127 | 8 | ..... | 3 | 37.5 | 2 | ..... | .... | .... |
| Rest of district | 248,500 | 344 | 17.8 | 32 | 9.5 | 108 | 48 | 1 | 7 |
| **EAST CENTRAL DISTRICT** | | | | | | | | | |
| Totals | 401,082 | 586 | 19.0 | 85 | 14.3 | 213 | 57 | 1 | 10 |
| SYRACUSE | 108,374 | 141 | 17.0 | 26 | 18.5 | 29 | 43 | .... | 1 |
| *Baldwinsville* | 3,000 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| De Witt | 5,435 | 7 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| CORTLAND | 9,014 | 14 | ..... | 4 | 28 5 | 3 | 70 | .... | 1 |
| *Homer* | 2,381 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Oneida* | 6,364 | 11 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Hamilton | 3,744 | 10 | ..... | 0 | ..... | 5 | 100 | .... | .... |
| Cazenovia | 3,830 | 6 | ..... | 1 | ..... | 1 | ..... | .... | .... |
| Brookfield | 2,726 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| *Norwich* | 5,766 | 13 | ..... | 0 | ..... | 8 | 75 | .... | .... |
| *Oneonta* | 7,147 | 9 | ..... | 2 | 22.2 | 2 | 111 | .... | .... |
| Worcester | 2,409 | 6 | ..... | 1 | 16.7 | 4 | 167 | .... | 1 |
| *Cooperstown* | 2,368 | 4 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Walton | 4,869 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Delhi | 3,243 | 3 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Liberty | 4,568 | 8 | ..... | 0 | ..... | 7 | ..... | .... | .... |
| Rest of district | 225,844 | 348 | 20 0 | 50 | 14.1 | 143 | 63 | 1 | 7 |
| **WEST CENTRAL DISTRICT** | | | | | | | | | |
| Totals | 315,945 | 525 | 19.3 | 53 | 10.2 | 224 | 33 | 4 | 5 |
| AUBURN | 30,345 | 42 | ..... | 5 | 12.0 | 11 | 60 | 1 | .... |
| ITHACA | 13,136 | 26 | ..... | 2 | 7.7 | 9 | 77 | .... | .... |
| Hector | 4,137 | 6 | ..... | 2 | 33.3 | 4 | ..... | .... | .... |
| *Waterloo* | 4,256 | 8 | ..... | 1 | 12.5 | 5 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 9 | ..... | 0 | ..... | 1 | 222 | .... | 2 |
| GENEVA | 10,433 | 19 | ..... | 3 | 15.7 | 9 | ..... | .... | .... |
| *Canandaigua* | 6,151 | 17 | ..... | 2 | 11.8 | 5 | ..... | .... | .... |
| Manchester | 4,733 | 9 | ..... | 1 | 14.2 | 5 | 142 | 1 | .... |
| Phelps | 4,788 | 4 | ..... | 1 | 25.0 | 2 | ..... | .... | .... |
| *Penn Yan* | 4,650 | 6 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Batavia* | 9,180 | 15 | ..... | 3 | 20.0 | 6 | ..... | .... | .... |
| *Dansville* | 3,633 | 8 | ..... | 1 | 12.5 | 4 | ..... | .... | .... |
| *Le Roy* | 3,144 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Warsaw | 4,341 | 7 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Rest of district | 206,500 | 344 | 20.7 | 37 | 9.4 | 154 | 33 | 2 | 3 |
| **LAKE ONTARIO AND WESTERN DISTRICT** | | | | | | | | | |
| Totals | 876,206 | 1,112 | 19.5 | 247 | 22.6 | 617 | 72 | 11 | 12 |
| BUFFALO | 352,387 | 394 | 14.5 | 131 | 33.3 | 393 | 107 | 6 | 7 |
| TONAWANDA | 7,421 | 5 | ..... | 2 | 40.0 | 0 | ..... | .... | .... |
| *Amherst* | 4,223 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |

FOR FEBRUARY—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | 1 | .... | .... | .... | 2 | 2 | .... | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 6 | 4 | .... | 1 | .... | 1 | 2 | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | 2 | .... | .... | .... | 2 | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | 4 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 2 | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | 3 | .... | .... | 1 | 1 | .... | 3 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 6 | 3 | .... | .... | 3 | 3 | 4 | 1 | .... | .... | 5 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | 2 | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | 2 | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | 1 | 2 | 2 | 3 | 88 | 16 | .... | 14 | 32 | 26 | 43 | 16 | 16 | 43 | 34 |
| .... | .... | 2 | 8 | 3 | 2 | 5 | 2 | 130 | 39 | 7 | 39 | 38 | 66 | 70 | 24 | 16 | 72 | 52 |
| .... | .... | 1 | .... | 1 | 1 | 2 | .... | 25 | 14 | 2 | 10 | 12 | 24 | 21 | 7 | 3 | 10 | 10 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | 1 | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | 1 | .... | 3 | .... | 2 | 2 | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | 2 | .... | 2 | .... | 1 | .... | .... | .... | 2 | 1 |
| .... | .... | .... | 1 | .... | .... | .... | .... | 3 | 1 | .... | 1 | .... | .... | 1 | .... | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | .... | 1 | 1 | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 3 | 2 | .... | 1 | .... | 2 | 1 | 1 | 1 | 1 | .... |
| .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | 3 | 1 | .... | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 2 | .... | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 1 | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | .... | 1 | .... | .... | .... | 2 | 2 |
| .... | .... | 1 | 6 | 2 | 1 | 3 | 1 | 86 | 18 | 5 | 21 | 22 | 35 | 37 | 14 | 7 | 47 | 34 |
| .... | .... | .... | 2 | 2 | 3 | 3 | 1 | 114 | 36 | 5 | 30 | 33 | 72 | 75 | 13 | 15 | 62 | 50 |
| .... | .... | .... | .... | .... | .... | .... | .... | 10 | 5 | .... | 3 | 2 | 3 | 8 | 1 | 4 | 3 | 2 |
| .... | .... | .... | .... | .... | 2 | .... | .... | 9 | 2 | 1 | 1 | 3 | 3 | 2 | .... | .... | 1 | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | 2 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | .... | 1 | 2 | .... | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 2 | 1 | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 6 | 3 | .... | 1 | .... | 5 | 1 | .... | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 4 | 2 | .... | .... | .... | 2 | 3 | .... | .... | 3 | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 4 | .... | .... | 3 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | .... | 1 | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 6 | 1 | 1 | .... | 1 | 1 | 2 | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | 4 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 1 | .... | .... | 1 | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 3 | .... | 1 | 2 | .... |
| .... | .... | .... | 2 | 2 | 1 | 3 | 1 | 70 | 21 | 3 | 23 | 20 | 51 | 43 | 11 | 7 | 44 | 37 |
| .... | .... | 4 | 10 | 4 | 12 | 11 | 14 | 252 | 84 | 10 | 74 | 61 | 120 | 146 | 51 | 33 | 83 | 120 |
| .... | .... | 4 | .... | 3 | 7 | 8 | 7 | 94 | 36 | 3 | 22 | 22 | 31 | 45 | 15 | 14 | 24 | 46 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*) | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 6 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| LOCKPORT | 16,581 | 28 | ..... | 6 | 21.4 | 4 | ..... | .... | .... |
| NIAGARA FALLS | 19,457 | 34 | ..... | 10 | 39.0 | 5 | 118 | .... | 3 |
| *Medina* | 4,716 | 10 | ..... | 0 | ..... | 3 | 200 | .... | 1 |
| *Albion* | 4,477 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Brockport* | 3,400 | 3 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| ROCHESTER | 862,608 | 222 | 17 5 | 46 | 20.7 | 58 | 59 | 4 | .... |
| Palmyra | 3,758 | 6 | ..... | 2 | 33 3 | 2 | ..... | .... | .... |
| *Newark* | 4,578 | 6 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Lyons | 5,8[illegible]4 | 14 | ..... | 1 | 7.1 | 5 | 71 | .... | .... |
| *Clyde* | 2,507 | 7 | ..... | 1 | 13.0 | 2 | ..... | .... | .... |
| OSWEGO | 22,200 | 32 | ..... | 4 | 12.5 | 7 | 32 | .... | .... |
| *Fulton* | 5,281 | 5 | ..... | 2 | ..... | 2 | ..... | .... | .... |
| Richland | 3,535 | 12 | ..... | 3 | 25 0 | 6 | 83 | .... | .... |
| Rest of district | 247,000 | 322 | 16 0 | 39 | 13.0 | 121 | 47 | 1 | 1 |
| Totals for the state | 7,268,000 | 11,021 | 19.5 | 2,482 | 22.6 | 2,585 | 86 | 41 | 114 |
| Average for past five years | ..... | 10,085 | 18.7 | 2,765 | 27.5 | ..... | 95 | 46 | 112 |

REMARKS—The State Department of Health has been established by Chapter 29 of the Laws of 1901, to take the place of the State Board of Health which is thereby set aside, the Department of Health succeeding to its powers and functions. Instead of the State Board of Health provided for by the Public Health Law, the present law, which is an amendment of it, provides for the office of Commissioner of Health, who is made the head of the Department of Health, and vested with all the general powers and duties of the former Board of Health, the terms of which under this law have expired.

Dr. Daniel Lewis, of New York City, has been appointed to the office of Commissioner of Health, and has entered upon his services as such, as the head of the State Department of Health. The headquarters of the Department and of the Commissioner continue to be in the Capitol at Albany.

There were 35 deaths from smallpox during the month, of which 32 occurred in New York City, 2 in Watertown and its environs, and 1 in Luzerne. During the month of March about eighty cases of smallpox have been reported up to near the end of the month in the metropolis. In Watertown (and Glen Park adjacent) an extensive outbreak began the middle of December but is under control. It spread to nine other towns from there. At Luzerne, Warren county, the fatal case was one of two that developed in January.

Of recently developing cases, there have been seventeen localities in which during the month of March (to the 25th) smallpox has appeared: In Mount Vernon, Yonkers, Fishkill, Peekskill and at Croton Dam near Peekskill, each 2, all probably traceable to New York; in Ballston Spa 2, and Ephratah, Broadalbin, Northville, each 1, and the town of Fulton, Schoharie county, 3, besides 2 of earlier occurrence, probably traceable to Gloversville; in Syracuse 2 in March and 5 earlier, Little Falls, Fort Plain, Rome, 1 each, and the town of Stockbridge in Madison county 4, the origin of all of which is not clear but no doubt traceable to older foci, as possibly Schenectady; and in Elmira and Niagara Falls each 1 case of the disease. In Albany also 1 case occurred during March, the sixth of scattered cases developing since November. There is recent not fully confirmed report of cases in Wells, Hamilton county. These seventeen places include all in which smallpox has broken out freshly since the first of March. The following places where earlier than March smallpox appeared, are free from it: Utica, Starkville, Herkimer, Eden, Hudson, Waterford, Caldwell, Luzerne, Sandy Hill, Edin-

## FEBRUARY—(*Concluded*)

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| ... | .... | .... | .... | .... | .... | .... | 3 | ..... | .... | ..... | 1 | ..... | ..... | 1 | .... | 1 | .... |
| ... | .... | .... | .... | .... | .... | .... | 5 | 5 | .... | ..... | 2 | 5 | 6 | 1 | ... | 2 | 2 |
| ... | .... | .... | .... | .... | .... | 1 | 9 | 2 | .... | 2 | 1 | 1 | 7 | 1 | 3 | .... | 4 |
| ... | .... | 1 | .... | .... | .... | .... | 1 | 1 | .... | 2 | .... | 1 | 3 | .... | .... | .... | .... |
| ... | .... | .... | .... | .... | .... | .... | 2 | ..... | 1 | ..... | .... | 1 | ..... | .... | .... | 1 | 1 |
| ... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | 1 | 1 | .... | .... | 1 | .... |
| ... | .... | 5 | .... | .... | 2 | 2 | 56 | 16 | 3 | 11 | 12 | 25 | 31 | 14 | 3 | 17 | 21 |
| ... | .... | .... | .... | .... | .... | .... | 1 | ..... | .... | ..... | .... | ..... | 1 | .... | .... | 2 | 2 |
| ... | .... | .... | .... | .... | .... | .... | 3 | ..... | .... | 1 | .... | ..... | 2 | .... | .... | .... | .... |
| ... | .... | .... | .... | .... | .... | 1 | 2 | ..... | .... | ..... | 1 | 2 | 4 | 1 | 3 | .... | .... |
| ... | .... | .... | .... | .... | .... | .... | 3 | ..... | .... | ..... | ... | 2 | ..... | .... | 1 | 1 | .... |
| ... | .... | .... | .... | 1 | .... | .... | 5 | 4 | ... | 4 | 1 | 7 | 3 | 2 | 2 | 1 | 2 |
| ... | .... | .... | .... | .... | .... | .... | 1 | ..... | .... | ..... | 1 | ..... | 1 | .... | .... | .... | 2 |
| ... | .... | .... | .... | 1 | .... | .... | 2 | ..... | 1 | 1 | 2 | 2 | 2 | .... | .... | 1 | .... |
| ... | .... | 4 | 1 | 3 | 1 | 3 | 65 | 20 | 2 | 28 | 18 | 42 | 39 | 16 | 7 | 32 | 39 |
| 35 | 126 | 74 | 54 | 52 | 246 | 200 | 2,291 | 1,130 | 114 | 614 | 832 | 1,095 | 1,135 | 371 | 403 | 603 | 1,486 |
| ... | 99 | 122 | 35 | 68 | 335 | 121 | 2,096 | 1,113 | 84 | 612 | 742 | 902 | 1,099 | 336 | 404 | 530 | 1,205 |

ı, Johnstown, Mohawk and Bleecker; in most of these places there was a single only and there was no continued epidemic. Sharon Springs is also free, and the ıboring town of Cherry Valley, where over 20 cases occurred and whence there spread to other towns, is likewise clear of a somewhat protracted epidemic.

has been previously reported in the Bulletin and by circular letters to health rs, smallpox was brought into the state after a period of practical freedom from ıt November by a traveling troupe and left at Albany, where but a single case red; at Schenectady and Gloversville, both of which had extensive epidemics, from ı they are not yet free, and whence distribution elsewhere occurred. Glens Falls Watertown, becoming infected in December, and the disease not soon recognized, likewise, especially the latter, had extensive epidemics and been centers for its ıd, and they have not yet reported themselves free from smallpox. The towns t Watertown, of Philadelphia, Alexandria, Norfolk, Gouverneur, Rutland, Cham- and Brownville, in the last of which especially there were many cases, all of h were reached by the disease in January, are now probably all free from it. e are now in the state, outside of New York City, about 50 cases of smallpox ibuted in the various localities enumerated. There is no place where a prolonged nuance of the disease is probable.

ilance is necessary on the part of health officers to secure early control of lpox. In a large majority of the places it has reached, the first case has been ınized and there has been no spread. It has always spread where it has escaped ıosis, as in some of these places, for weeks; even though mild, it has been a y experience in such case.

e death rate for February has decreased from 20.0 in January to 19.5. The deaths fancy and old age continue unchanged, and there is no noteworthy change in the ılence of common zymotic diseases.

*idemic Influenza* is reported as the direct or contributory cause of 622 deaths de of the city of New York, but this is doubtless much less than its actual con- tion to the mortality, which would appear to be fairly estimated at 1,500. Of 1,219 ıs from acute respiratory diseases, 1,015 were from *pneumonia*, to about 40.0 per of which grippe was named as contributory. Twenty-one per cent. of the deaths ıe month were from acute respiratory diseases. The rural death rate was 19.0 per population, being but little below that of the cities above 20,000 population.

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS,

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| MARITIME DISTRICT Totals | 3,852,922 | 6,877 | 21.0 | 2,076 | 32 0 | 751 | 110 | 29 | 42 |
| CITY OF NEW YORK Totals | 3,536,517 | 6,398 | 21.2 | 1,957 | 30.5 | 657 | 115 | 27 | 42 |
| BOROUGH OF MANHATTAN | 1,873,562 | 3,536 | 22.0 | 1,153 | 32.7 | 307 | 111 | 19 | 20 |
| BOROUGH OF THE BRONX | 222,124 | 447 | 24.0 | 109 | 24.5 | 59 | 161 | 2 | 1 |
| BOROUGH OF BROOKLYN | 1,209,064 | 2,087 | 20.1 | 618 | 29.5 | 244 | 115 | 4 | 17 |
| BOROUGH OF QUEENS | 162,834 | 210 | 15 2 | 47 | 22.4 | 26 | 71 | 1 | 1 |
| BOROUGH OF RICHMOND | 68,933 | 118 | 20.1 | 30 | 25.8 | 21 | 102 | .... | 1 |
| Oyster Bay | 16,334 | 27 | ..... | 6 | 22.2 | 5 | ..... | .... | .... |
| Hempstead | 27,066 | 18 | ..... | 1 | 5.5 | 4 | 55 | .... | .... |
| North Hempstead | 12,048 | 16 | ..... | 2 | 12.5 | 4 | ..... | .... | .... |
| Southold | 8,301 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Sag Harbor* | 2,000 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| Huntington | 9,483 | 12 | ..... | 3 | 25.0 | 5 | 87 | .... | .... |
| Brookhaven | 14,592 | 21 | ..... | 3 | 14.3 | 7 | ..... | .... | .... |
| YONKERS | 47,931 | 86 | 21.0 | 29 | 33.7 | 13 | 35 | 2 | .... |
| Greenburgh | 15,564 | 19 | ..... | 6 | 31.5 | 4 | 210 | .... | .... |
| MOUNT VERNON | 20,346 | 32 | 19.0 | 7 | 21.8 | 5 | 62 | .... | .... |
| *Port Chester* | 7,440 | 10 | ..... | 4 | 40 0 | 1 | ..... | .... | .... |
| *Ossining* | 7,939 | 17 | ..... | 2 | 11.6 | 2 | ..... | .... | .... |
| NEW ROCHELLE | 14,720 | 30 | ..... | 13 | 43.3 | 6 | 33 | .... | .... |
| *Peekskill* | 10,358 | 22 | ..... | 4 | 36.4 | 2 | 182 | .... | .... |
| *White Plains* | 7,900 | 11 | ..... | 4 | 36.4 | 0 | 90 | .... | .... |
| Rest of district | 85,000 | 150 | 20.5 | 34 | 22.5 | 35 | 40 | .... | .... |
| HUDSON VALLEY DISTRICT Totals | 690,143 | 1,173 | 20.0 | 236 | 22.0 | 306 | 70 | 7 | 24 |
| ALBANY | 94,151 | 164 | 20.4 | 31 | 18.8 | 26 | 36 | .. | 1 |
| COHOES | 24,000 | 40 | 20.0 | 11 | 27.5 | 6 | 25 | 1 | .... |
| TROY (including *Lansingburgh*) | 75,057 | 182 | 28.5 | 36 | 20.0 | 25 | 82 | 3 | 2 |
| WATERVLIET | 14,321 | 35 | ..... | 9 | 25.7 | 6 | 114 | .... | 4 |
| *Green Island* | 4,770 | 6 | ..... | 2 | 33.3 | 1 | 166 | .... | 1 |
| *Hoosick Falls* | 5,671 | 10 | ..... | 2 | 20.0 | 3 | 100 | .... | .... |
| RENSSELAER | 7,466 | 13 | ..... | 4 | 30.6 | 3 | 76 | .... | 1 |
| Coxsackie | 4,102 | 3 | ..... | 2 | 66.6 | 1 | ..... | .... | .... |
| *Catskill* | 5,486 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| HUDSON | 9,528 | 23 | ..... | 6 | 26.1 | 4 | 174 | 1 | 1 |
| KINGSTON | 24,535 | 54 | 26.0 | 12 | 22.2 | 10 | 204 | .... | .... |
| *Ellenville* | 3,000 | 6 | ..... | 2 | 33.3 | 0 | ..... | .... | .... |
| Marbletown | 3,511 | 9 | ..... | 1 | 11.1 | 4 | ..... | .... | .... |
| Rosendale | 6,278 | 9 | ..... | 3 | 33.3 | 3 | ..... | .... | .... |
| Esopus | 4,907 | 12 | ..... | 3 | 25.0 | 6 | 166 | .... | .... |
| *Saugerties* | 3,700 | 12 | ..... | 2 | 16.7 | 2 | ..... | .... | .... |
| POUGHKEEPSIE | 24,029 | 48 | 24.0 | 14 | 29.2 | 13 | 62 | .... | 2 |
| Fishkill | 13,016 | 19 | ..... | 4 | 28.5 | 5 | 71 | .... | .... |
| *Wappingers Falls* | 3,504 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| NEWBURGH | 25,000 | 33 | 16.0 | 7 | 21.2 | 7 | 60 | 1 | .... |
| *Port Jervis* | 9,385 | 16 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| MIDDLETOWN | 14,522 | 24 | ..... | 4 | 16.7 | 9 | 42 | .... | 1 |
| Warwick | 6,403 | 12 | ..... | 2 | 18.2 | 4 | ..... | .... | .... |
| *Goshen* | 4,564 | 12 | ..... | 3 | 25.0 | 3 | 166 | .... | .... |

## ɪK STATE DEPARTMENT OF HEALTH

### *ricts, cities, villages and towns during March*, 1901

[ɛɛ in *italic* and towns in roman type]

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 37 | 160 | 34 | 22 | 24 | 232 | 169 | 1,508 | 826 | 73 | 286 | 602 | 567 | 639 | 229 | 247 | 135 | 1,010 |
| 37 | 159 | 30 | 21 | 19 | 225 | 169 | 1,376 | 778 | 72 | 259 | 566 | 505 | 574 | 217 | 233 | 124 | 960 |
| 1 | 87 | 13 | 10 | 13 | 125 | 102 | 764 | 381 | 45 | 134 | 297 | 339 | 306 | 131 | 148 | 61 | 538 |
| 36 | 15 | .... | 1 | 1 | 10 | 5 | 84 | 110 | 2 | 23 | 23 | 25 | 36 | 12 | 13 | 8 | 39 |
| .... | 53 | 15 | 7 | 5 | 81 | 56 | 465 | 250 | 23 | 85 | 216 | 109 | 201 | 68 | 60 | 44 | 325 |
| .... | 2 | .... | 2 | .... | 3 | 6 | 45 | 27 | 1 | 11 | 15 | 20 | 24 | .... | 8 | 9 | 35 |
| .... | 2 | 2 | 1 | .... | 6 | .... | 18 | 10 | 1 | 6 | 15 | 12 | 7 | 6 | 4 | 2 | 23 |
| .... | .... | .... | .... | .... | .... | .... | 2 | 3 | .... | 3 | 4 | 5 | 5 | 1 | 1 | .... | 3 |
| .... | .... | .... | .... | .... | 1 | .... | 4 | .... | .... | .... | 3 | 2 | 5 | 2 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 7 | 1 | .... | .... | 1 | 1 | 1 | 1 | 1 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | 1 | .... | .... | .... | .... | .... | 1 | 1 |
| .... | .... | .... | 1 | .... | .... | .... | 2 | 1 | .... | 1 | .... | 1 | 3 | 1 | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 6 | 2 | .... | 2 | 1 | 3 | 4 | .... | 1 | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | 28 | 3 | .... | 5 | .... | 16 | 11 | 1 | 2 | 2 | 15 |
| .... | .... | 3 | .... | .... | 1 | .... | 5 | 2 | .... | .... | .... | .... | 4 | 1 | 3 | .... | .... |
| .... | .... | .... | .... | .... | 2 | .... | 6 | 5 | .... | 1 | 6 | 3 | 6 | 1 | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 3 | 2 | 1 | 1 | 1 | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 2 | 4 | .... | .... | 4 | 3 | 1 | 2 | .... | 1 | .... |
| .... | .... | .... | .... | .... | 1 | .... | 8 | 1 | .... | 1 | 2 | 6 | 5 | 1 | .... | .... | 5 |
| .... | .... | .... | .... | .... | 2 | .... | 5 | 3 | .... | 2 | 3 | 3 | .... | 1 | 1 | .... | 2 |
| .... | .... | .... | .... | 1 | .... | .... | 6 | .... | .... | 1 | .... | 2 | .... | .... | .... | .... | 1 |
| .... | 1 | 1 | .... | 4 | .... | .... | 45 | 19 | .... | 9 | 11 | 15 | 19 | .... | 4 | 4 | 18 |
| .... | 14 | 12 | 3 | 2 | 13 | 6 | 270 | 123 | 5 | 86 | 64 | 126 | 164 | 25 | 35 | 72 | 122 |
| .... | .... | 1 | 1 | .... | 2 | 1 | 42 | 27 | 1 | 10 | 13 | 16 | 19 | 9 | 7 | 4 | 10 |
| .... | .... | .... | .... | .... | .... | .... | 11 | 2 | .... | 7 | 3 | 2 | 4 | .... | 1 | 2 | 7 |
| .... | .... | 3 | 1 | 1 | 3 | 2 | 49 | 23 | .... | 18 | 8 | 14 | 22 | 3 | 4 | 9 | 17 |
| .... | .... | .... | .... | .... | .... | .... | 18 | 1 | 1 | 1 | .... | 2 | 1 | .... | .... | 2 | 5 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 1 | .... | 1 | .... | .... | .... | .... | 1 |
| .... | .... | 1 | .... | .... | .... | .... | 4 | 1 | .... | .... | .... | 1 | .... | .... | .... | 3 | .... |
| .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | 1 | .... | 2 | 3 | .... | .... | 1 | 2 |
| .... | .... | 2 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | 1 | 1 | .... | .... | .... | 2 |
| .... | 1 | .... | .... | .... | .... | 1 | 3 | 2 | .... | 1 | 2 | 5 | 1 | .... | .... | .... | 5 |
| .... | 9 | .... | .... | .... | 2 | .... | 5 | 6 | .... | 1 | 3 | 6 | 6 | 3 | 3 | 3 | 7 |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | .... | 2 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | .... | .... | 3 | 3 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 2 | .... | .... | 2 | .... | .... | 1 | 2 |
| .... | 1 | .... | .... | .... | 1 | .... | 1 | .... | .... | 1 | 1 | 3 | 2 | 1 | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | 1 | 1 | 1 | 2 | 1 | .... | .... | 2 |
| .... | .... | .... | .... | 1 | .... | .... | 14 | 3 | .... | 2 | 1 | 4 | 6 | 4 | 1 | 3 | 7 |
| .... | 1 | .... | .... | .... | .... | .... | 5 | 2 | 1 | 1 | 2 | 2 | 1 | .... | .... | 3 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | 1 | .... | 6 | 2 | .... | 2 | 2 | 5 | 5 | 1 | 2 | 1 | 5 |
| .... | .... | .... | .... | .... | .... | .... | 3 | 2 | .... | .... | .... | 3 | 3 | .... | 1 | 3 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | .... | 3 | 3 | 6 | 2 | 2 | 1 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 2 | 3 | .... | 2 | .... | .... | 2 | 1 | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | 2 | 1 | 1 | .... | 1 | 1 | 1 | 1 | .... | .... | 1 | 3 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| HUDSON VALLEY DIST.—(*Con.*) | | | | | | | | | |
| Montgomery | 5,939 | 10 | ..... | 2 | 20.0 | 1 | ..... | .... | ... |
| Haverstraw | 9,874 | 8 | ..... | 2 | 25.0 | 3 | 125 | .... | ... |
| *Nyack* | 4,275 | 1 | ..... | 0 | ..... | 1 | ..... | .... | ... |
| Ramapo | 7,502 | 3 | ..... | 0 | ..... | 1 | ..... | .... | ... |
| Rest of district | 271,800 | 400 | 17.0 | 68 | 17.0 | 152 | 60 | 1 | 1 |
| ADIRONDACK AND NORTH'RN DISTRICT Totals | 394,762 | 602 | 18.0 | 109 | 18.0 | 177 | 100 | 3 | |
| WATERTOWN | 21,700 | 40 | 21.7 | 5 | 12.5 | 8 | 125 | .... | |
| Ellisburgh | 3,888 | 18 | ..... | 3 | 16.5 | 7 | 55 | .... | ... |
| Cape Vincent | 2,882 | 12 | ..... | 2 | 16.7 | 3 | 167 | .... | ... |
| Clayton | 4,313 | 3 | ..... | 2 | 66.6 | 1 | ..... | .... | ... |
| OGDENSBURGH | 12,633 | 25 | ..... | 6 | 24.0 | 6 | 80 | .... | ... |
| Gouverneur | 6,000 | 12 | ..... | 1 | 8.3 | 5 | 83 | .... | ... |
| *Potsdam* | 3,843 | 13 | ..... | 3 | 23.0 | 1 | 75 | .... | 1 |
| Canton | 6,387 | 16 | ..... | 3 | 18.5 | 4 | 62 | 1 | ... |
| *Malone* | 5,935 | 12 | ..... | 0 | ..... | 4 | ..... | .... | ... |
| *Plattsburgh* | 8,434 | 16 | ..... | 5 | 31.2 | 2 | 62 | .... | ... |
| *Glens Falls* | 12,613 | 34 | ..... | 10 | 29.4 | 5 | 118 | .... | ... |
| *Whitehall* | 4,377 | 2 | ..... | 2 | ..... | 0 | 500 | .... | ... |
| Fort Edward | 5,216 | 9 | ..... | 1 | 11.1 | 0 | 111 | .... | 1 |
| *Sandy Hill* | 4,473 | 10 | ..... | 4 | 40.0 | 2 | ..... | .... | ... |
| Granville | 5,217 | 11 | ..... | 2 | 19.2 | 3 | 192 | 1 | ... |
| Greenwich | 4,172 | 9 | ..... | 0 | ..... | 3 | ..... | .... | ... |
| Lowville | 3,746 | 3 | ..... | 1 | 33.3 | 0 | 333 | .... | ... |
| Rest or district | 278,943 | 357 | 15.0 | 59 | 16.5 | 123 | 106 | 1 | 3 |
| MOHAWK VALLEY DISTRICT Totals | 408,973 | 637 | 18.5 | 110 | 17.2 | 175 | 65 | 6 | 6 |
| SCHENECTADY | 31,682 | 44 | 16.4 | 10 | 22.7 | 9 | 68 | .... | 1 |
| Cobleskill | 3,978 | 4 | ..... | 1 | 25.0 | 0 | ..... | .... | ... |
| AMSTERDAM | 20,929 | 38 | 21.3 | 9 | 23.6 | 9 | ..... | .... | ... |
| *Fort Plain* | 2,444 | ..... | ..... | ..... | ..... | ..... | ..... | .... | ... |
| JOHNSTOWN | 10,130 | 9 | ..... | 4 | 44.4 | 3 | ..... | .... | ... |
| GLOVERSVILLE | 18,349 | 30 | ..... | 6 | 20.0 | 1 | 33 | .... | ... |
| LITTLE FALLS | 10,381 | 4 | ..... | 2 | 50.0 | 1 | ..... | .... | ... |
| *Herkimer* | 5,555 | 5 | ..... | 2 | 40.0 | 1 | ..... | .... | ... |
| *Ilion* | 5,138 | 5 | ..... | 0 | ..... | 2 | ..... | .... | ... |
| UTICA | 56,383 | 82 | 17.0 | 9 | 11.0 | 18 | 25 | .... | 1 |
| Whitestown | 6,215 | 8 | ..... | 2 | 25.0 | 1 | 125 | .... | ... |
| ROME | 15,343 | 24 | ..... | 1 | 4.2 | 7 | 42 | 1 | ... |
| Boonville | 3,332 | 5 | ..... | 0 | ..... | 0 | ..... | .... | ... |
| Camden | 3,745 | 6 | ..... | 0 | ..... | 1 | 167 | 1 | ... |
| Waterford | 6,157 | 18 | ..... | 6 | 33.3 | 5 | 222 | ... | 1 |
| *Mechanicville* | 4,695 | 17 | ..... | 6 | 35.3 | 5 | ..... | .... | ... |
| *Ballston Spa* | 3,923 | 8 | ..... | 3 | 37.5 | 2 | ..... | .... | ... |
| *Saratoga Springs* | 12,409 | 18 | ..... | 2 | 11.1 | 2 | 55 | .... | ... |
| Rest of district | 188,170 | 312 | 19.3 | 57 | 18.4 | 108 | 87 | 4 | 3 |
| SOUTHERN TIER DISTRICT Totals | 429,434 | 544 | 13.0 | 88 | 16.2 | 154 | 71 | 2 | 7 |
| BINGHAMTON | 39,647 | 67 | 19.7 | 16 | 23.8 | 9 | 90 | .... | 1 |
| *Owego* | 5,039 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | ... |
| *Candor* | 3,330 | 5 | ..... | 1 | 20.0 | 3 | ..... | .... | ... |
| *Waverly* | 4,465 | 3 | ..... | 0 | ..... | 1 | ..... | .... | ... |
| ELMIRA | 35,872 | 61 | 21.5 | 17 | 28.0 | 8 | 150 | 1 | 3 |

FOR MARCH—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | 2 | .... | 1 | .... | 1 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 3 | 1 | .... | 1 | 1 | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | .... | 1 | .... | .... | .... | .... |
| .... | .... | 2 | 5 | 1 | .... | 3 | .... | 85 | 39 | 2 | 31 | 20 | 50 | 70 | .... | 12 | 30 | 38 |
| .... | .... | 12 | 20 | 6 | 5 | 4 | 4 | 114 | 42 | 6 | 40 | 27 | 63 | 77 | 20 | 17 | 62 | 73 |
| .... | .... | .... | 1 | 2 | .... | .... | .... | 3 | 4 | 1 | 2 | 4 | 3 | 4 | .... | 3 | 5 | 6 |
| .... | .... | .... | 1 | .... | .... | .... | .... | 3 | 3 | 1 | 1 | .... | 3 | 1 | .... | .... | 3 | 2 |
| .... | .... | .... | 1 | .... | .... | .... | 1 | 2 | 1 | .... | 1 | .... | .... | 1 | .... | .... | 2 | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | 1 | .... | .... | .... | 1 | 4 | 2 | .... | 2 | 1 | 1 | 3 | 3 | 2 | 2 | 3 |
| .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 1 | 1 | 1 | .... | 1 | 1 | .... | .... | 2 | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | 4 | 2 | 1 | .... | .... | .... | 2 | 1 | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 3 | 1 | 1 | 5 | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 3 | .... | .... | 1 | 4 | 1 | .... | 1 | .... | 1 |
| .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | 4 | 1 | 3 | 1 | .... | 1 | 1 | 3 |
| .... | .... | 3 | .... | .... | .... | 1 | .... | 4 | 3 | 1 | 6 | 1 | 4 | 7 | 1 | .... | .... | 3 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | .... | 2 | .... | 1 | .... | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 4 | 2 | .... | .... | .... | .... | 1 | .... | .... | 1 | 2 |
| .... | .... | 1 | .... | .... | .... | .... | .... | 1 | 1 | .... | 1 | 1 | 1 | 2 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 4 | .... | .... | .... | .... | 2 | 2 | .... | .... | .... | 1 |
| .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | .... |
| .... | .... | 8 | 14 | 3 | 5 | 3 | 1 | 79 | 15 | 1 | 19 | 15 | 40 | 44 | 14 | 7 | 44 | 41 |
| .... | 2 | 6 | 5 | 6 | 1 | 7 | 3 | 145 | 82 | 11 | 50 | 40 | 52 | 74 | 22 | 15 | 42 | 62 |
| .... | .... | .... | 1 | .... | .... | .... | 1 | 8 | 9 | 1 | 3 | 4 | 3 | 3 | 1 | 2 | 3 | 4 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | 1 | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 12 | 7 | 2 | 3 | 3 | 2 | 3 | .... | 1 | 1 | 4 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | 1 | .... | 1 | 1 | .... | 1 | .... | .... | 1 | 1 |
| .... | 2 | .... | .... | .... | .... | .... | .... | 7 | 6 | 1 | 3 | 1 | .... | 1 | 1 | 1 | 1 | 6 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 1 | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | 1 | .... | 2 | .... | .... | .... |
| .... | .... | .... | 1 | .... | .... | .... | .... | 16 | 14 | 1 | 6 | 4 | 9 | 15 | 5 | 3 | 4 | 3 |
| .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 1 | .... | 1 | 1 | .... | 3 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | 4 | .... | 4 | 1 | 6 | 3 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | 1 | 1 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 2 | 1 | .... | .... | .... |
| .... | .... | .... | .... | 1 | .... | 2 | .... | 7 | .... | .... | 2 | 2 | 1 | .... | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | 4 | 2 | 1 | 2 | .... | .... | .... | 5 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 2 | .... | 1 | .... | .... | 2 | 1 |
| .... | .... | .... | 1 | .... | .... | .... | .... | 3 | .... | .... | 1 | 5 | 1 | 4 | .... | 1 | .... | 2 |
| .... | .... | 6 | 2 | 4 | 1 | 5 | 2 | 79 | 35 | 5 | 19 | 13 | 24 | 34 | 10 | 6 | 29 | 31 |
| .... | .... | .... | 3 | 4 | 7 | 6 | 10 | 99 | 41 | 3 | 39 | 37 | 71 | 77 | 19 | 21 | 46 | 52 |
| .... | .... | .... | .... | 2 | .... | 2 | 1 | 11 | 5 | .... | 5 | 6 | 6 | 8 | 4 | 1 | 8 | 7 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 2 | 1 | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 1 | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... |
| .... | .... | .... | .... | .... | 4 | .... | 1 | 18 | 4 | .... | 1 | 6 | 7 | 3 | 1 | 1 | 5 | 6 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of-- | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| **SOUTHERN TIER DIST.—(*Con.*)** | | | | | | | | | |
| Horseheads | 4,944 | 8 | ..... | 0 | ..... | 2 | 125 | .... | .... |
| HORNELLSVILLE | 12,000 | 13 | ..... | 2 | 23.0 | 0 | 115 | .... | 1 |
| *Bath* | 5,000 | 11 | ..... | 0 | ..... | 5 | ..... | .... | .... |
| CORNING | 11,061 | 22 | ..... | 6 | 27.8 | 5 | 48 | .... | .... |
| Wellsville | 5,000 | 7 | ..... | 2 | 23.5 | 2 | ..... | .... | .... |
| OLEAN | 9,462 | 9 | ..... | 3 | 33.3 | 3 | 111 | .... | .... |
| *Salamanca* | 4,251 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| DUNKIRK | 11,616 | 9 | ..... | 4 | 44.4 | 3 | 222 | .... | .... |
| JAMESTOWN | 22,892 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Westfield* | 2,430 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Fredonia* | 4,125 | 6 | ..... | 2 | 33.3 | 2 | 167 | .... | .... |
| Rest of district | 248,500 | 311 | 15.0 | 34 | 11.0 | 108 | 55 | 1 | 2 |
| **EAST CENTRAL DISTRICT** | | | | | | | | | |
| Totals | 401,082 | 574 | 16.8 | 108 | 18.5 | 173 | 63 | 4 | 5 |
| SYRACUSE | 108,374 | 147 | 16.0 | 32 | 21.8 | 19 | 61 | 1 | 1 |
| *Baldwinsville* | 3,000 | 9 | ..... | 1 | 11.1 | 3 | ..... | .... | .... |
| De Witt | 5,435 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| CORTLAND | 9,014 | 13 | ..... | 5 | 38.5 | 2 | 460 | 1 | 1 |
| *Homer* | 2,381 | 3 | ..... | 1 | 33.3 | 0 | ..... | .... | .... |
| *Oneida* | 7,942 | 2 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Hamilton | 3,744 | 8 | ..... | 0 | ..... | 4 | 125 | 1 | .... |
| Cazenovia | 3,830 | 10 | ..... | 0 | ..... | 5 | ..... | .... | .... |
| Brookfield | 2,726 | 2 | ..... | 2 | 50.0 | 1 | ..... | .... | .... |
| *Norwich* | 5,766 | 16 | ..... | 4 | 25.0 | 7 | 185 | .... | .... |
| *Oneonta* | 7,147 | 16 | ..... | 5 | 31.2 | 3 | 125 | .... | .... |
| Worcester | 2,409 | 7 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Cooperstown* | 2,368 | 2 | ..... | 1 | 50.0 | 1 | ..... | .... | .... |
| Walton | 4,869 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Delhi | 3,243 | 2 | ..... | 1 | 50.0 | 0 | ..... | .... | .... |
| Liberty | 4,568 | 8 | ..... | 1 | 12.5 | 3 | 125 | .... | .... |
| Rest of district | 225,844 | 324 | 16.8 | 53 | 16.3 | 121 | 43 | 1 | 3 |
| **WEST CENTRAL DISTRICT** | | | | | | | | | |
| Totals | 405,946 | 404 | 15.0 | 93 | 23.0 | 165 | 36 | 1 | 1 |
| AUBURN | 30,345 | 38 | ..... | 8 | 21.0 | 4 | ..... | .... | .... |
| ITHACA | 13,136 | 20 | ..... | 3 | 15.0 | 7 | ..... | .... | .... |
| Hector | 4,137 | 7 | ..... | 2 | 28.5 | 2 | 285 | .... | .... |
| *Waterloo* | 4,256 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 7 | ..... | 2 | 28.5 | 3 | ..... | .... | .... |
| GENEVA | 10,433 | 13 | ..... | 4 | 30.0 | 2 | ..... | .... | .... |
| *Canandaigua* | 6,151 | 5 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Manchester | 4,733 | 6 | ..... | 1 | 16.6 | 1 | ..... | .... | .... |
| Phelps | 4,788 | 4 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Penn Yan* | 4,650 | 11 | ..... | 3 | 30.0 | 1 | ..... | .... | .... |
| *Batavia* | 9,180 | 10 | ..... | 3 | 30.0 | 3 | 100 | .... | .... |
| *Dansville* | 3,633 | 5 | ..... | 2 | 40.0 | 0 | ..... | .... | .... |
| *Le Roy* | 3,144 | 9 | ..... | 3 | 33.3 | 2 | 222 | 1 | .... |
| Warsaw | 4,341 | 7 | ..... | 1 | 14.2 | 5 | ..... | .... | .... |
| Rest of district | 206,500 | 257 | 15.0 | 61 | 23.0 | 128 | 40 | .... | 1 |
| **LAKE ONTARIO AND WESTERN DISTRICT** | | | | | | | | | |
| Totals | 879,022 | 1,102 | 14.7 | 250 | 22.5 | 266 | 80 | 9 | 19 |
| BUFFALO | 352,387 | 428 | 14.5 | 109 | 25.5 | 77 | 82 | 3 | 5 |
| *TONAWANDA* | 7,421 | 9 | ..... | 3 | 33.3 | 1 | ..... | .... | .... |
| *Amherst* | 4,223 | 13 | ..... | 3 | 23.0 | 5 | 76 | .... | .... |

**MARCH—(*Continued*)**

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| --- | --- | --- | --- | --- | --- | 1 | 2 | 1 | --- | --- | 2 | 1 | 1 | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | 2 | 1 | --- | 2 | --- | 1 | 1 | 1 | 2 | --- | 2 |
| --- | --- | --- | --- | --- | --- | --- | 2 | 1 | --- | 2 | 1 | 3 | 2 | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | 1 | 6 | 3 | --- | 2 | --- | 2 | 2 | 1 | 1 | --- | 4 |
| --- | --- | --- | --- | --- | --- | --- | 3 | --- | --- | --- | --- | 1 | 1 | --- | --- | 1 | 1 |
| --- | --- | --- | --- | 1 | --- | --- | 1 | --- | --- | 1 | --- | 2 | 2 | --- | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 2 | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | 1 | --- | 1 | 1 | 1 | --- | 1 | 2 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 2 | --- | --- |
| --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | 1 | 2 | --- | 1 | 1 |
| --- | --- | 3 | 2 | 2 | 3 | 4 | 51 | 25 | 3 | 24 | 20 | 42 | 52 | 9 | 13 | 28 | 27 |
| --- | 4 | 11 | 4 | 2 | 1 | 5 | 112 | 45 | 6 | 41 | 23 | 71 | 85 | 23 | 14 | 52 | 66 |
| --- | 1 | --- | 2 | 1 | --- | 3 | 28 | 12 | 4 | 13 | 8 | 16 | 23 | 5 | 7 | 4 | 18 |
| --- | --- | --- | --- | --- | --- | --- | 2 | 2 | --- | --- | --- | 1 | 1 | --- | 1 | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | 2 | 1 | --- | --- | --- | 1 | --- | --- | --- | 1 | --- |
| --- | --- | 4 | --- | --- | --- | --- | 2 | --- | --- | 1 | --- | 1 | 1 | 1 | --- | 1 | --- |
| --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | 3 | --- | --- | 1 | --- | 2 | 1 | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | 2 | 2 | --- | 1 | 1 | --- | 1 | 1 | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- |
| --- | --- | 1 | 1 | --- | --- | 1 | 1 | 2 | --- | --- | --- | 4 | 1 | 1 | --- | 2 | 2 |
| --- | 2 | --- | --- | --- | --- | --- | 3 | 1 | --- | 1 | 1 | 5 | 1 | --- | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | 4 | 1 | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| --- | --- | --- | --- | --- | 1 | --- | 1 | 2 | --- | 1 | 1 | --- | 1 | --- | --- | 1 | --- |
| --- | 1 | 6 | 1 | 1 | --- | 1 | 64 | 23 | 2 | 23 | 10 | 36 | 54 | 15 | 6 | 38 | 39 |
| --- | --- | 5 | 2 | 2 | 2 | 2 | 76 | 27 | 4 | 26 | 24 | 52 | 69 | 19 | 10 | 37 | 45 |
| --- | --- | --- | --- | --- | --- | --- | 14 | 4 | --- | 2 | 1 | 6 | 4 | 2 | --- | --- | 5 |
| --- | --- | --- | --- | --- | --- | --- | 4 | 3 | 1 | 1 | 2 | 1 | 3 | 4 | --- | 2 | 2 |
| --- | --- | 2 | --- | --- | --- | --- | 2 | --- | --- | --- | --- | --- | 2 | --- | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | 2 | --- | --- | --- | --- | 1 | --- |
| --- | --- | --- | --- | --- | --- | --- | 3 | 1 | --- | --- | --- | --- | 2 | --- | --- | 1 | --- |
| --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 2 | 1 | 2 | --- | 1 | 2 | 1 | 3 |
| --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | 2 | --- | --- | 1 | --- |
| --- | --- | --- | --- | --- | --- | --- | 1 | 2 | --- | --- | --- | --- | 1 | 1 | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | --- | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | 4 | 1 | --- | 1 | 2 | 1 | 1 | 1 | --- | --- | --- |
| --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | 2 | 1 | 2 | --- | 1 | --- | 3 |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 | --- | 1 | --- | --- | 2 |
| --- | --- | 1 | --- | --- | --- | --- | 2 | --- | --- | --- | 1 | 2 | 2 | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | 3 | --- | --- | --- | --- | 3 | --- | --- | --- | 1 | --- |
| --- | --- | 1 | 2 | 2 | 2 | 2 | 41 | 13 | 3 | 19 | 12 | 35 | 49 | 12 | 7 | 29 | 27 |
| --- | 4 | 10 | 3 | 14 | 12 | 16 | 198 | 107 | 14 | 76 | 67 | 114 | 139 | 52 | 50 | 86 | 112 |
| --- | 3 | 1 | --- | 7 | 5 | 11 | 75 | 46 | 4 | 17 | 25 | 32 | 61 | 24 | 25 | 34 | 50 |
| --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 1 | 1 | 1 | 1 | 1 | --- | 1 | 2 |
| --- | --- | --- | --- | --- | --- | 1 | 3 | 2 | --- | --- | 1 | 2 | --- | 1 | 1 | 2 | --- |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1000 deaths from all causes | [illegible] |
|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*) | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 6 | ..... | 1 | 16.7 | 3 | 167 | .. |
| LOCKPORT | 16,581 | 30 | ..... | 8 | 26.6 | 6 | 166 | |
| NIAGARA FALLS | 19,457 | 29 | ..... | 7 | 24.1 | 2 | 135 | .. |
| *Medina* | 4,716 | 5 | ..... | 2 | 40.0 | 0 | 200 | .. |
| *Albion* | 4,477 | 7 | ..... | 0 | ..... | 4 | ..... | .. |
| *Brockport* | 3,400 | 2 | ..... | 0 | ..... | 2 | ..... | .. |
| ROCHESTER | 162,608 | 221 | 16.0 | 40 | 18.0 | 46 | 50 | |
| Palmyra | 3,758 | 4 | ..... | 0 | ..... | 1 | ..... | .. |
| *Newark* | 4,578 | 2 | ..... | 0 | ..... | 1 | ..... | .. |
| Lyons | 5,824 | 14 | ..... | 3 | 21.4 | 4 | 128 | .. |
| *Clyde* | 2,507 | ..... | ..... | ..... | ..... | ..... | ..... | .. |
| OSWEGO | 22,200 | 29 | ..... | 7 | 24.1 | 5 | 35 | .. |
| *Fulton* | 5,281 | 8 | ..... | 2 | 25.0 | 3 | ..... | .. |
| Richland | 3,535 | 3 | ..... | 0 | ..... | 1 | ..... | .. |
| Rest of district | 247,000 | 292 | 14.0 | 65 | 22.4 | 105 | 90 | |
| Totals for the state | 7,268,000 | 11,913 | 19.2 | 3,070 | 25.8 | 2,167 | 94 | |
| Average for past 5 years | ..... | 11,410 | 19.7 | 3,175 | 27.8 | ..... | 85 | |

REMARKS—Of chief interest affecting the health of the state continue to be sm and epidemic influenza. Smallpox has appeared since the last report at Geneva, two cases developed the last of March and have now (last of April) recovered; port, Long Island, 1 case, recovered; Castleton, Rensselaer county, 5 or 6 cases; ( ville, Schoharie county, 1; Stark, Herkimer county, 2; Scotia, near Schenect Brockport, where it existed undetected until 12 cases occurred, of which 1 now re town of Ogden, Monroe county, 3 cases developed in April; Brewster, 1, a negr Virginia; Pine Hills, Ulster county, 1, coming from outside with the disease; T recently developed; Rutland, 4 cases, originating in the neighboring town of Cha Islip, 1 case, originating in New York; New Berlin, 1 case; Oneonta, 2 cases of a origin, neither determined; Cohoes, early in April, 1 case, and 1 secondary to it nating from North Pownal, Vt., and more recently a considerable number o have developed among mill operatives from an unrecognized case occurring ea

Besides these sixteen localities in which smallpox has developed during April fourteen of which it continues at this issue, to the number of 22 cases, not c Cohoes (where there are probably 12 or 15 more), smallpox continues to exist at now about 15 cases of various origin; Gloversville, where early in the monti remained 15 cases; Watertown, probably free, and the associated epidemic immediately adjoining community of Glen Park is reported to have at last been to an end; Champion, 1, originating in Watertown; and Mount Vernon, where tional cases occurred since last month. There is smallpox in nineteen separate palities of the state at this time. In most of these it has no established footh will disappear with the recovery of the initial cases. In some it has establishe widely from failure to discover the first case; of this Cohoes is an illustration, there are not a few cases due to the failure of a physician to discriminate chickenpox and smallpox, although the patient was an adult. From the health standpoint chickenpox is an untenable diagnosis at this time; many prolong demics would have been prevented by holding to this. Cuban itch is a name g recent time to outbreaks like that of Brockport, lasting for weeks, until a well- case has shown it to be smallpox, as it always proves to be. Grippe with erupt also been a mal-diagnosis. The extraordinarily mildness of the type of smallp prevailing should make health officers guarded to apprehend every in the lea picious case. Every acute eruption, papular in quality, on hands and face, fo even a slight initial fever, should be suspected and isolated. With insignificar come some typical cases, perhaps severe and even fatal; otherwise it might al ignored. There were 39 deaths from smallpox during the month, 2 in Gloversvi rest in New York city.

Vaccination will immunize any locality so that it will not spread; there is n *to which* it may not be brought, and an undetected mild case may cause wid *exposure*. The following report of the health officer of Troy is commende *model for* all:

"I can, with absolute certainty, state that there is not a pupil in our public *who does* not show evidence of successful vaccination. No pupil is admitte *schools* who has not within the past three months secured from this dep

FOR MARCH—(*Concluded*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | ..... | .... | ..... | 1 | ..... | 2 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | 1 | 4 | 5 | .... | ..... | .... | 2 | 4 | .... | 2 | 3 | 5 |
| .... | .... | .... | .... | .... | .... | .... | .... | 9 | 2 | 2 | 3 | 1 | 2 | ..... | 1 | 1 | .... | 4 |
| .... | .... | .... | 1 | .... | .... | .... | .... | 1 | ..... | 1 | ..... | .... | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | ..... | 1 | ..... | .... | 1 | ..... | .... | 2 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | ..... | .... | ..... | .... | ..... | ..... | .... | .... | 1 | .... |
| .... | .... | .... | .... | 2 | .... | 4 | 2 | 44 | 20 | 2 | 26 | 19 | 27 | 29 | 9 | 6 | 12 | 16 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | ..... | .... | 1 | .... | ..... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | 1 | ..... | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 3 | .... | 1 | 1 | 2 | ..... | .... | 2 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | ..... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | 1 | .... | .... | 3 | 3 | 1 | 4 | 1 | 6 | 3 | 1 | 2 | 2 | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | ..... | .... | ..... | 1 | 4 | ..... | .... | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | 1 | 1 | .... | ..... | ..... | .... | .... | 1 | .... |
| .... | .... | 1 | 8 | 1 | 6 | 1 | 1 | 49 | 26 | 2 | 22 | 16 | 33 | 37 | 15 | 8 | 28 | 30 |
| 6 | 39 | 200 | 100 | 50 | 57 | 277 | 215 | 2,522 | 1,293 | 122 | 644 | 884 | 1,116 | 1,324 | 409 | 409 | 532 | 1,542 |
| 21 | 1 | 95 | 154 | 48 | 9[illegible] | 318 | 141 | 2,390 | 1,296 | 113 | 700 | 822 | 1,050 | 1,246 | 387 | 428 | 578 | 1,347 |

certificate of vaccination, and no certificate has been granted until ocular inspection has demonstrated satisfactorily that a successful vaccination has been made. The parochial and private schools have received the same attention. We have examined between fifteen and sixteen thousand children, and of this number six thousand primary vaccinations have been made. All asylums in the city have been carefully looked after. We have vaccinated every hobo at station houses, prisoners at jail, inmates of cheap lodging houses, etc. Our new hospital for infectious and contagious diseases is now ready for any emergency."

Grippe is estimated to have caused during the month about 1500 deaths, the same as in February, measuring the mortality from it chiefly by that of acute respiratory diseases, which, during both months, caused 82 deaths daily; for it was reported as the cause of death in but few cases. On only about 300 death returns out of 5,500 was grippe noted as in any way contributory. In March, 1900, the most severe epidemic that has yet occurred was at its height and was then estimated to have caused 3,500 deaths.

Acute respiratory diseases caused 21 per cent of the total of the month, the same proportions as in February. Of 1,143 deaths from this cause (outside of New York city), 870 or 76 per cent were from pneumonia, which, at that rate, caused 1900 deaths during the month. Of these not due to pneumonia the majority were from acute and capilliary bronchitis and the rest from acute pleurisy. The highest mortality relatively from pneumonia was in the Hudson and Mohawk valley districts and the Maritime, and the lowest in the central and western part of the state.

Zymotic diseases caused 1116 deaths, or 9.4 per cent of the total mortality. This is a little above the average from this month, compared with which scarlet fever is increased by 100 deaths, measles and diarrhoeal diseases by 50 deaths each, whilst on the other hand, diphtheria is below the average in mortality. Scarlet fever was mostly fatal in the Maritime district, though many epidemics are reported of a mild form of the disease. Measles, however, is of much more general distribution. Of 277 deaths from diphtheria, but 52 occurred outside of the city of New York. The mortality of early life is a little below the average for this month, 25.8 per cent of the deaths occurring under the age of five years. There were 2163 deaths above the age of 70 years, or 19 per cent of the total, against 23 per cent in February.

There were 11,913 deaths from all causes and a death rate of 19.2; a decrease from a daily rate of 394 in February to one of 384. During the first three months of the year there have been 35,529 deaths, including delayed returns, a daily rate of 395, which exceeds that of the same months in 1900 by 12 deaths daily. The average mortality for the past five years for these three months has been 32,000. Further compared with this average this year shows 500 fewer deaths under the age of five years, the total of zymotic deaths being about the same for the two periods. Acute respiratory diseases caused nearly 100 more deaths than the average of the three months and other local diseases were increased, all included, by about the same amount. Consumption, cancer, old age, and accident have each increased above the average by from 100 to 200 deaths. Part of this increase is to be credited to the prevalence of grippe during this period which, however, has recurred at this season with varying severity for the past twelve years, although the height of these epidemics has not always fallen upon these three months of the year.

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| **MARITIME DISTRICT** | | | | | | | | | |
| Totals | 3,852,922 | 6,846 | 20.0 | 2,005 | 31.6 | 700 | 126 | 29 | 52 |
| **CITY OF NEW YORK** | | | | | | | | | |
| Totals | 3,536,517 | 5,929 | 20.4 | 1,892 | 32.0 | 527 | 130 | 28 | 48 |
| BOROUGH OF MANHATTAN | 1,873,562 | 3,316 | 21.5 | 1,123 | 33.8 | 251 | 126 | 22 | 19 |
| BOROUGH OF THE BRONX | 222,124 | 394 | 22.0 | 107 | 27.0 | 37 | 187 | 1 | 3 |
| BOROUGH OF BROOKLYN | 1,209,064 | 1,907 | 19.0 | 583 | 30.0 | 201 | 135 | 5 | 21 |
| BOROUGH OF QUEENS | 162,834 | 207 | 15.5 | 57 | 26.0 | 22 | 60 | .... | 4 |
| BOROUGH OF RICHMOND | 68,933 | 105 | 18.5 | 22 | 21.0 | 16 | 85 | .... | 1 |
| Oyster Bay | 16,334 | 13 | ..... | 3 | 23.0 | 4 | 153 | .... | .... |
| Hempstead | 27,066 | 29 | 13.5 | 6 | 20.7 | 4 | 35 | .... | .... |
| North Hempstead | 12,048 | 17 | ..... | 3 | 17.0 | 4 | 57 | .... | .... |
| Southold | 8,301 | 4 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Sag Harbor* | 2,000 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| Huntington | 9,483 | 7 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Brookhaven | 14,592 | 10 | ..... | 2 | 20.0 | 2 | ..... | .... | .... |
| YONKERS | 47,931 | 63 | 15.5 | 26 | 41.2 | 4 | 64 | 1 | .... |
| Greenburgh | 15,564 | 20 | ..... | 2 | 10.5 | 6 | 150 | .... | .... |
| MOUNT VERNON | 20,346 | 29 | 14.2 | 5 | 17.2 | 6 | 103 | .... | 1 |
| *Port Chester* | 7,440 | 21 | ..... | 14 | 66.6 | 2 | 142 | .... | .... |
| *Ossining* | 7,939 | 13 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| NEW ROCHELLE | 14,720 | 17 | ..... | 6 | 35.2 | 0 | ..... | .... | .... |
| *Peekskill* | 10,358 | 26 | ..... | 12 | 20.7 | 9 | ..... | .... | .... |
| *White Plains* | 7,900 | 12 | ..... | 2 | 16.6 | 0 | 166 | .... | .... |
| Rest of district | 85,000 | 128 | 18.5 | 30 | 13.0 | 27 | 230 | .... | 3 |
| **HUDSON VALLEY DISTRICT** | | | | | | | | | |
| Totals | 690,143 | 1,039 | 18.8 | 208 | 20.0 | 210 | 84 | 4 | 28 |
| ALBANY | 94,151 | 156 | 20.1 | 28 | 18.0 | 25 | 52 | .... | 1 |
| COHOES | 24,000 | 44 | 21.7 | 16 | 37.2 | 4 | 70 | .... | 1 |
| TROY (including *Lansingburgh*) | 75,057 | 168 | 27.0 | 44 | 26.2 | 20 | 100 | 1 | 5 |
| WATERVLIET | 14,321 | 16 | ..... | 3 | 18.7 | 1 | ..... | .... | .... |
| *Green Island* | 4,770 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Hoosick Falls* | 5,671 | 11 | ..... | 2 | 18.2 | 1 | 182 | .... | .... |
| RENSSELAER | 7,466 | 11 | ..... | 2 | 18.2 | 2 | 182 | 1 | 1 |
| Coxsackie | 4,102 | 7 | ..... | 0 | ..... | 1 | 142 | .... | 1 |
| *Catskill* | 5,486 | 13 | ..... | 2 | 15.4 | 2 | 153 | .... | 1 |
| HUDSON | 9,528 | 18 | ..... | 4 | 22.2 | 5 | 167 | .... | 2 |
| KINGSTON | 24,535 | 39 | 16.3 | 5 | 12.8 | 5 | 154 | .... | .... |
| *Ellenville* | 3,000 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Marbletown | 3,511 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| Rosendale | 6,278 | 9 | ..... | 2 | 22.2 | 0 | ..... | .... | .... |
| Esopus | 4,907 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Saugerties* | 3,700 | 5 | ..... | 2 | 40.0 | 0 | 400 | .... | 1 |
| POUGHKEEPSIE | 24,029 | 31 | 15.6 | 5 | 16.2 | 5 | 130 | .... | 2 |
| Fishkill | 13,016 | 16 | ..... | 1 | 12.5 | 5 | 62 | .... | .... |
| *Wappingers Falls* | 3,504 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| NEWBURGH | 25,000 | 37 | 18.0 | 4 | 10.8 | 11 | 27 | .... | .... |
| *Port Jervis* | 9,385 | 12 | ..... | 1 | 8.3 | 0 | 83 | .... | 1 |
| MIDDLETOWN | 14,522 | 19 | ..... | 8 | 42.1 | 3 | ..... | .... | .... |
| Warwick | 6,403 | 8 | ..... | 2 | 25.0 | 1 | 125 | .... | .... |
| Goshen | 4,564 | 9 | ..... | 0 | ..... | 5 | ..... | .... | .... |

## .K STATE DEPARTMENT OF HEALTH

### *ricts, cities, villages and towns during April,* 1901

**;es in *italic* and towns in roman type]**

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles. | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrhoal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 41 | 189 | 35 | 34 | 36 | 214 | 161 | 1,202 | 809 | 63 | 281 | 566 | 514 | 590 | 217 | 269 | 106 | 924 |
| 40 | 185 | 32 | 33 | 26 | 211 | 155 | 1,127 | 761 | 62 | 261 | 528 | 470 | 521 | 205 | 250 | 90 | 877 |
| 1 | 99 | 8 | 19 | 12 | 125 | 110 | 643 | 387 | 35 | 153 | 307 | 292 | 277 | 114 | 141 | 49 | 499 |
| 37 | 7 | 2 | 1 | 1 | 12 | 6 | 63 | 89 | 5 | 10 | 22 | 25 | 35 | 10 | 17 | 5 | 42 |
| 2 | 77 | 16 | 12 | 13 | 69 | 38 | 351 | 245 | 19 | 82 | 187 | 121 | 163 | 73 | 71 | 29 | 310 |
| ... | 2 | ... | ... | ... | 4 | 1 | 50 | 26 | 3 | 14 | 12 | 19 | 26 | 8 | 15 | 2 | 20 |
| ... | ... | 6 | 1 | ... | 1 | ... | 20 | 14 | ... | 2 | 10 | 13 | 20 | ... | 6 | 5 | 6 |
| ... | 1 | ... | ... | 1 | ... | ... | 5 | 2 | ... | ... | ... | 1 | 1 | 1 | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | 1 | 6 | 3 | ... | 1 | 5 | 2 | 5 | 1 | 3 | 2 | ... |
| ... | ... | ... | 1 | ... | ... | ... | 6 | ... | ... | 1 | 1 | 1 | 2 | 2 | 1 | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | 3 | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 3 | 4 | ... | ... | ... | ... | 1 | ... | 1 | ... | 1 |
| ... | ... | ... | ... | ... | 1 | 2 | 15 | 7 | ... | 1 | 4 | 7 | 13 | 1 | 3 | 1 | 7 |
| ... | ... | 1 | ... | ... | 1 | 1 | 5 | 2 | ... | 1 | ... | 2 | 4 | ... | 2 | ... | 1 |
| 1 | ... | ... | ... | ... | 1 | ... | 3 | ... | ... | 3 | 2 | 6 | 8 | 1 | ... | 1 | 2 |
| ... | ... | 2 | ... | ... | ... | 1 | 3 | 1 | ... | 2 | 1 | 2 | 2 | ... | ... | 1 | 6 |
| ... | ... | ... | ... | ... | ... | ... | 3 | 4 | ... | 1 | 1 | 2 | 1 | ... | 1 | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | 2 | ... | 3 | ... | 2 | 2 | 2 | 2 | ... | 3 |
| ... | ... | ... | ... | ... | ... | ... | 5 | 1 | ... | 2 | ... | 2 | 5 | ... | 2 | ... | 9 |
| ... | 1 | ... | ... | 1 | ... | ... | 1 | 3 | ... | 1 | ... | ... | 1 | ... | 2 | ... | 2 |
| ... | 2 | ... | ... | 8 | ... | 1 | 15 | 18 | 1 | 3 | 13 | 17 | 18 | 4 | 2 | 8 | 13 |
| ... | 9 | 17 | 2 | 5 | 16 | 3 | 178 | 124 | 6 | 88 | 56 | 115 | 152 | 40 | 43 | 61 | 88 |
| ... | 1 | 2 | ... | ... | 4 | ... | 20 | 22 | 1 | 15 | 14 | 24 | 29 | 4 | 7 | 7 | 5 |
| ... | ... | 1 | ... | ... | ... | 1 | 14 | 2 | ... | 5 | 2 | 4 | 5 | 3 | 2 | ... | 4 |
| ... | ... | 6 | ... | 2 | 2 | 1 | 31 | 28 | ... | 12 | 8 | 16 | 19 | 9 | 2 | 6 | 20 |
| ... | ... | ... | ... | ... | ... | ... | 7 | 3 | ... | 1 | 1 | ... | 1 | ... | 1 | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... |
| ... | ... | 1 | ... | ... | 1 | ... | 2 | 3 | ... | 1 | ... | ... | 1 | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | 1 | 1 | 1 | ... | 1 | 1 | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 2 | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | 2 |
| ... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... | 2 | 1 | 5 | 1 | ... | ... | 1 | ... |
| ... | ... | 1 | ... | ... | ... | ... | 1 | 1 | ... | 4 | 1 | 2 | 1 | 1 | ... | 2 | 2 |
| ... | 5 | 1 | ... | ... | ... | ... | 3 | 5 | 1 | 4 | 2 | 6 | 3 | 3 | 2 | 2 | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 2 | 1 | ... | 2 | ... | 1 | 1 | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | ... |
| ... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | 1 |
| ... | ... | ... | 1 | ... | ... | ... | 8 | 3 | ... | 3 | 2 | 5 | 5 | 1 | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 3 | 1 | ... | 2 | 1 | ... | 2 | ... | 4 | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | 1 | ... | ... |
| ... | ... | ... | ... | ... | 1 | ... | 5 | 2 | ... | 2 | 3 | 7 | 7 | 1 | 3 | 3 | 3 |
| ... | ... | ... | ... | ... | ... | ... | 3 | 2 | ... | ... | ... | 2 | 1 | ... | 2 | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 2 | 3 | ... | 2 | ... | 1 | 2 | 1 | 3 | 1 | 4 |
| ... | ... | ... | ... | ... | 1 | ... | ... | 2 | 1 | ... | 1 | 1 | ... | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | 1 | 3 | ... | 1 | ... | 1 | 1 | ... | ... | 2 | 1 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| HUDSON VALLEY DIST.—(*Con.*) | | | | | | | | | |
| Montgomery | 5,939 | 8 | ..... | 1 | ..... | 3 | ..... | .... | .... |
| Haverstraw | 9,874 | 5 | ..... | 2 | 25.0 | 1 | ..... | .... | .... |
| *Nyack* | 4,275 | 5 | ..... | 1 | 20 0 | 2 | 400 | ... | 1 |
| Ramapo | 7,502 | 11 | ..... | 2 | 18.2 | 4 | ..... | .... | .... |
| Rest of district | 271,800 | 367 | 15.5 | 68 | 18.3 | 99 | 80 | 2 | 11 |
| ADIRONDACK AND NORTH'N DISTRICT Totals | 394,762 | 491 | 14.5 | 99 | 19.1 | 140 | 76 | 6 | 6 |
| WATERTOWN | 21,700 | 23 | 13.0 | 4 | 17.4 | 7 | 45 | .... | 1 |
| Ellisburgh | 3,888 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Cape Vincent | 2,882 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Clayton | 4,313 | 7 | ..... | 1 | 14.2 | 5 | ..... | .... | .... |
| OGDENSBURGH | 12,633 | 29 | ..... | 7 | 24.1 | 4 | 200 | 1 | 1 |
| Gouverneur | 6,000 | 8 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| *Potsdam* | 3,843 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Canton | 6,387 | 13 | ..... | 4 | 30.0 | 6 | 75 | .... | .... |
| *Malone* | 5,935 | 11 | ..... | 2 | 18.2 | 3 | 90 | .... | .... |
| *Plattsburgh* | 8,434 | 12 | ..... | 4 | 33 3 | 2 | 84 | .... | .... |
| *Glens Falls* | 12,613 | 23 | ..... | 4 | 17.5 | 5 | 130 | .... | 1 |
| *Whitehall* | 4,377 | 2 | ..... | 1 | 50.0 | 1 | ..... | .... | .... |
| Fort Edward | 5,216 | 7 | ..... | 2 | 28.5 | 1 | ..... | .... | .... |
| *Sandy Hill* | 4,473 | 13 | ..... | 3 | 23 0 | 4 | ..... | .... | .... |
| Granville | 5,217 | 6 | ..... | 1 | 16.6 | 0 | ..... | .... | .... |
| Greenwich | 4,172 | 10 | ..... | 2 | 17.2 | 0 | ..... | .... | .... |
| Lowville | 3,746 | 6 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Rest of district | 278,943 | 313 | 13.0 | 65 | 20.0 | 92 | 77 | 5 | 3 |
| MOHAWK VALLEY DISTRICT Totals | 408,973 | 564 | 17 0 | 106 | 18.8 | 150 | 80 | 4 | 7 |
| SCHENECTADY | 31,682 | 45 | 17.2 | 12 | 26.6 | 9 | 133 | .... | 1 |
| Cobleskill | 3,978 | 2 | ..... | 1 | 50.0 | 0 | ..... | .... | .... |
| AMSTERDAM | 20,929 | 30 | 17.5 | 9 | 30.0 | 6 | 33 | .... | .... |
| *Fort Plain* | 2,444 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| JOHNSTOWN | 10,130 | 11 | ..... | 4 | 36.4 | 2 | ..... | .... | .... |
| GLOVERSVILLE | 18,349 | 21 | ..... | 5 | ..... | 8 | ..... | .... | .... |
| LITTLE FALLS | 10,381 | 10 | ..... | 1 | 10 0 | 1 | 100 | .... | 1 |
| *Herkimer* | 5,555 | 7 | ..... | 1 | 14.2 | 3 | 142 | .... | .... |
| *Ilion* | 5,138 | 4 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| UTICA | 56,383 | 78 | 16 8 | 19 | 24.4 | 8 | 90 | .... | .... |
| Whitestown | 6,235 | 8 | ..... | 2 | 25.0 | 1 | ..... | .... | .... |
| ROME | 15,343 | 19 | ..... | 3 | 15.7 | 5 | 105 | .... | .... |
| Boonville | 3,332 | 11 | ..... | 3 | 27.3 | 3 | 90 | 1 | .... |
| Camden | 3,745 | 6 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Waterford | 6,157 | 7 | ..... | 4 | 57.0 | 0 | 285 | .... | .... |
| *Mechanicville* | 4,695 | 11 | ..... | 4 | 36.4 | 2 | ..... | .... | .... |
| *Ballston Spa* | 3,923 | 3 | ..... | 0 | ..... | 1 | 333 | .... | .... |
| *Saratoga Springs* | 12,409 | 28 | ..... | 6 | 21 4 | 6 | 70 | 1 | .... |
| Rest of district | 188,170 | 263 | 16 0 | 31 | 12.5 | 97 | 84 | 2 | 5 |
| SOUTHERN TIER DISTRICT Totals | 429,434 | 534 | 14.2 | 80 | 14.5 | 155 | 80 | 4 | 8 |
| BINGHAMTON | 39,647 | 73 | 22.0 | 10 | 13.8 | 14 | 55 | .... | .... |
| *Owego* | 5,039 | 11 | ..... | 1 | 9.0 | 7 | 190 | .... | 1 |
| CANDOR | 3,330 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Waverly* | 4,465 | 7 | ..... | 1 | 14.2 | 3 | | .... | .... |
| *ELMIRA* | 35,872 | 42 | 14.2 | 10 | 23.8 | 8 | 119 | 1 | .... |

APRIL—(*Continued*)

| | Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| | | | | | | | | 2 | | | | | 3 | 3 | | | | |
| | | | | | | | | 1 | 1 | | | | | 1 | | | 1 | 1 |
| | | | | | | 1 | | 1 | | | | | | 1 | | | 1 | |
| | | | | | | | | 7 | 1 | | | | | 3 | | | | |
| | | 2 | 4 | 1 | 3 | 6 | 1 | 63 | 35 | 2 | 28 | 17 | 34 | 61 | 15 | 15 | 29 | 36 |
| | | 2 | 9 | 5 | 2 | 6 | 2 | 74 | 62 | 3 | 28 | 30 | 47 | 87 | 16 | 20 | 46 | 40 |
| | | | | | | | | 5 | 1 | | 2 | 1 | 3 | 4 | 3 | 1 | 1 | 1 |
| | | | | | | | | | | | 2 | 2 | | 1 | | 1 | | |
| | | | | | | | | 1 | | | | | 1 | | | | | |
| | | | | | | | | 1 | | | | | | 1 | 1 | | 3 | 1 |
| | | | 1 | 1 | 1 | | 1 | 5 | 4 | | 1 | 1 | 5 | 4 | 2 | | | 1 |
| | | | | | | | | 1 | 2 | | | | 2 | | | 1 | 1 | 1 |
| | | | | | | | | | | | | | | | 1 | | | |
| | | | | | | 1 | | 3 | 1 | | 2 | 1 | | 3 | | | 1 | 1 |
| | | | | | | 1 | | 3 | 4 | | | | | 1 | | | 2 | |
| | | | | 1 | | | | 1 | 1 | | 2 | | 3 | | | 1 | 1 | 2 |
| | | | 1 | | | | 1 | 2 | 2 | | | 2 | 3 | 5 | 1 | 2 | 1 | 2 |
| | | | | | | | | | | | | | | 1 | | | | 1 |
| | | | | | | | | 2 | | | | | | 1 | 1 | 1 | | 2 |
| | | | | | | | | 5 | 2 | | 1 | 2 | | 1 | | | | 2 |
| | | | | | | | | | 1 | | | | | 3 | | 1 | 1 | |
| | | | | | | | | 2 | 1 | | | 1 | | 2 | 2 | | | 2 |
| | | | | | | | | | | | | 1 | 2 | 2 | | | 1 | |
| | | 2 | 7 | 3 | 1 | 4 | | 43 | 43 | 3 | 18 | 19 | 28 | 58 | 5 | 12 | 34 | 25 |
| | 1 | 5 | 7 | 7 | 2 | 9 | 4 | 92 | 52 | 5 | 40 | 33 | 68 | 77 | 28 | 21 | 42 | 60 |
| | | 3 | | | | 2 | | 8 | 4 | | 2 | 6 | 2 | 4 | 3 | 2 | 1 | 7 |
| | | | | | | | | 1 | | | | 1 | | | | | | |
| | | | | | | 1 | | 4 | 4 | | 3 | 1 | 4 | 5 | 4 | 3 | | 1 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | 1 | | | 3 | | 1 | 4 | | | | 2 |
| | | | | | | | | 5 | 3 | 1 | 1 | | 3 | 3 | 1 | 1 | 1 | 2 |
| | | | | | | | | 2 | | | 1 | 1 | 2 | | | 2 | | 1 |
| | | | | | | 1 | | 2 | | | 1 | | 1 | 1 | | | 1 | |
| | | | | | | | | | 2 | | | 1 | | 1 | | | | |
| | | | 2 | 1 | | 3 | 1 | 12 | 10 | | 8 | 2 | 11 | 9 | 3 | 4 | 2 | 10 |
| | | | | | | | | 1 | 3 | | | 1 | | 1 | 1 | | 1 | |
| | 1 | | | 1 | | | | 1 | | | 3 | 1 | 5 | 2 | 1 | | 1 | 3 |
| | | | | | | | | 3 | 1 | | | 1 | 1 | 2 | | | 1 | 1 |
| | | | | | | | | 1 | | | | | 2 | | 1 | | 1 | 1 |
| | | | 1 | | | | 1 | 1 | 1 | | 1 | | | 2 | | | | |
| | | | | | | | | 3 | 1 | | 1 | | 1 | 1 | | 1 | | 3 |
| | | | | | | 1 | | 1 | | | | | | 1 | | | | |
| | | | 1 | | | | | 4 | 3 | | 5 | 7 | 2 | 3 | | | 1 | 1 |
| | | 2 | 3 | 5 | 2 | 1 | 2 | 42 | 20 | 4 | 11 | 11 | 33 | 38 | 14 | 8 | 32 | 28 |
| | | 2 | 4 | 3 | 10 | 5 | 4 | 70 | 47 | 3 | 41 | 41 | 58 | 77 | 20 | 28 | 51 | 58 |
| | | | 1 | 1 | 2 | | | 16 | 14 | 1 | 4 | 4 | 5 | 9 | 3 | 3 | 6 | 4 |
| | | | | | | | 1 | | | | | | 1 | 1 | 2 | | 4 | 1 |
| | | | | | | | | | | | 1 | 2 | | | | | | |
| | | | | | | | | 3 | | | | | 1 | 1 | | | 2 | |
| | | | | | 4 | | | 4 | 5 | | 1 | 4 | | 7 | 3 | | 3 | 5 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 6 | ..... | 2 | 33.3 | 3 | 167 | .... | .... |
| HORNELLSVILLE | 12,000 | 13 | ..... | 2 | 15.4 | 1 | 76 | 1 | .... |
| *Bath* | 5,000 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| CORNING | 11,061 | 15 | ..... | 2 | 13.3 | 5 | ..... | .... | .... |
| Wellsville | 5,000 | 5 | ..... | 1 | 20.0 | 3 | 200 | .... | .... |
| OLEAN | 9,462 | 20 | ..... | 5 | 30.0 | 5 | 100 | .... | .... |
| *Salamanca* | 4,251 | 8 | ..... | 2 | 25.0 | 3 | ..... | .... | .... |
| DUNKIRK | 11,616 | 20 | ..... | 3 | 15.0 | 3 | 200 | .... | 2 |
| JAMESTOWN | 22,892 | 30 | 16.0 | 5 | 16.7 | 7 | 33 | .... | .... |
| *Westfield* | 2,430 | 5 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Fredonia* | 4,125 | 5 | ..... | 1 | 20.0 | 2 | 200 | .... | .... |
| Rest of district | 248,500 | 271 | 12.0 | 35 | 12.9 | 91 | 78 | 2 | 5 |
| EAST CENTRAL DISTRICT Totals | 401,082 | 534 | 15.7 | 84 | 16 0 | 161 | 84 | 1 | 4 |
| SYRACUSE | 108,374 | 143 | 16.0 | 30 | 22.0 | 28 | 47 | 1 | 1 |
| *Baldwinsville* | 3,000 | 6 | ..... | 1 | 16.6 | 3 | ..... | .... | .... |
| De Witt | 5,435 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| CORTLAND | 9,014 | 9 | ..... | 1 | 11.1 | 2 | 222 | .... | .... |
| *Homer* | 2,381 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Oneida* | 7,942 | 8 | ..... | 1 | 12.5 | 2 | ..... | .... | .... |
| Hamilton | 3,744 | 7 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Cazenovia | 3,830 | 4 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Brookfield | 2,726 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| *Norwich* | 5,766 | 12 | ..... | 2 | 16.6 | 3 | 166 | .... | .... |
| *Oneonta* | 7,147 | 8 | ..... | 3 | 37.5 | 1 | 250 | .... | .... |
| Worcester | 2,409 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| *Cooperstown* | 2,362 | 5 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Walton | 4,869 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Delhi | 3,243 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Liberty | 4,568 | 11 | ..... | 1 | ..... | 2 | ..... | .... | .... |
| Rest of district | 225,844 | 300 | 15 0 | 43 | 15.3 | 106 | 114 | .... | 3 |
| WEST CENTRAL DISTRICT Totals | 405,946 | 377 | 14.3 | 51 | 13.0 | 136 | 45 | 1 | 2 |
| AUBURN | 30,345 | 37 | 14.5 | 6 | 16.2 | 9 | 27 | .... | 1 |
| ITHACA | 13,136 | 12 | ..... | 1 | 8.3 | 2 | 83 | .... | .... |
| Hector | 4,137 | 8 | ..... | 1 | 12.5 | 2 | ..... | .... | .... |
| *Waterloo* | 4,256 | 4 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 12 | ..... | 1 | 8.3 | 3 | ..... | .... | .... |
| GENEVA | 10,433 | 15 | ..... | 6 | 40.0 | 1 | 200 | .... | .... |
| *Canandaigua* | 6,151 | 15 | ..... | 2 | 13.3 | 9 | 60 | .... | .... |
| Manchester | 4,733 | 5 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Phelps | 4,788 | 8 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| *Penn Yan* | 4,650 | 5 | ..... | 2 | 40.0 | 2 | ..... | .... | .... |
| *Batavia* | 9,180 | 15 | ..... | 3 | 20.0 | 4 | ..... | .... | .... |
| *Dansville* | 3,633 | 6 | ..... | 2 | ..... | 3 | ..... | .... | .... |
| *Le Roy* | 3,144 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Warsaw | 4,341 | 6 | ..... | 1 | 16 7 | 1 | 167 | .... | .... |
| Rest of district | 206,500 | 229 | 12.5 | 26 | 11.0 | 91 | 48 | 1 | 1 |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 879,022 | 1,153 | 15.8 | 259 | 22.5 | 250 | 90 | 10 | 13 |
| BUFFALO | 352,387 | 451 | 15.5 | 132 | 29.3 | 70 | 118 | 5 | 5 |
| TONAWANDA | 7,421 | 11 | ..... | 1 | 9.0 | 4 | ..... | .... | .... |
| *Amherst* | 4,223 | 5 | ..... | 1 | 20.0 | 3 | ..... | .... | .... |

**APRIL—(*Continued*)**

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | 3 | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 5 | ... | 2 | 1 | ... | 1 | ... | ... | 1 | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 4 | 1 | ... | 1 | ... | 2 | 1 | ... | 2 | 2 | 2 |
| ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 1 |
| ... | ... | ... | 1 | ... | ... | ... | 1 | 1 | ... | 2 | ... | ... | 4 | 2 | 3 | 2 | 4 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 1 | 1 | 1 | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | 2 | 2 | 1 | ... | 5 | 1 | 2 | ... | ... | 1 | 2 | 2 |
| ... | 1 | ... | ... | ... | ... | ... | 2 | 5 | ... | 1 | 4 | 2 | 7 | 2 | 1 | 1 | 4 |
| ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 2 | ... | 1 | ... | ... |
| ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | 1 | 1 | ... |
| ... | 1 | 3 | ... | 4 | 3 | 1 | 35 | 14 | 2 | 23 | 21 | 37 | 40 | 7 | 16 | 26 | 31 |
| ... | 7 | 22 | 1 | 2 | 5 | 3 | 76 | 69 | 3 | 36 | 33 | 79 | 66 | 21 | 15 | 34 | 57 |
| ... | ... | ... | ... | 2 | 2 | ... | 20 | 25 | 1 | 9 | 7 | 23 | 8 | 6 | 5 | 10 | 23 |
| ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | 1 | ... | ... | ... | 1 | 1 | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | 1 |
| ... | ... | 2 | ... | ... | ... | ... | 1 | ... | ... | ... | 2 | ... | 1 | ... | ... | 1 | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | 1 | 3 | 1 | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 2 | 1 | 2 | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 2 | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 2 | ... | ... | 2 | ... | ... | ... | ... |
| ... | 2 | ... | ... | ... | ... | ... | 2 | 3 | ... | 1 | ... | 1 | 2 | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | 1 | 1 | 2 | ... | ... | ... | 2 | ... | ... | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | 2 | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | 2 | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 2 | 5 | ... | ... | ... | 1 | 2 | ... | ... | ... | 1 |
| ... | 5 | 20 | 1 | ... | 2 | 2 | 31 | 30 | 2 | 22 | 20 | 49 | 42 | 9 | 9 | 16 | 27 |
| ... | 1 | 7 | 1 | 2 | 2 | 1 | 51 | 32 | 2 | 27 | 27 | 49 | 66 | 13 | 21 | 34 | 38 |
| ... | ... | ... | ... | ... | ... | ... | 4 | 6 | ... | 2 | 2 | 2 | 10 | 1 | 6 | 1 | 2 |
| ... | ... | ... | ... | ... | ... | 1 | 2 | ... | ... | ... | 2 | 3 | 1 | 1 | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | 1 | 1 | 1 | 2 | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 3 | 1 | ... | ... | 1 | 2 | ... | 1 | 3 | ... | 1 |
| ... | ... | 3 | ... | ... | ... | ... | 2 | 1 | ... | 3 | 1 | ... | 2 | ... | 1 | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 4 | 1 | 1 | 2 | ... | ... | 3 | 3 |
| ... | ... | ... | ... | ... | ... | ... | 2 | 1 | ... | ... | ... | 1 | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | 1 | 1 | 1 | 1 | ... | 2 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 3 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | 2 | 3 | ... | ... | ... | 1 | 1 | 2 | 2 | 2 | 2 |
| ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | 3 | ... | ... | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 2 | ... | 1 | ... | ... | ... | 1 | 1 |
| ... | 1 | 4 | 1 | 1 | 1 | ... | 30 | 18 | 2 | 15 | 15 | 36 | 43 | 6 | 7 | 23 | 24 |
| ... | 4 | 8 | 9 | 19 | 16 | 22 | 156 | 101 | 16 | 72 | 81 | 128 | 153 | 68 | 64 | 73 | 139 |
| ... | 3 | ... | 3 | 12 | 9 | 15 | 74 | 36 | 6 | 21 | 27 | 41 | 55 | 28 | 25 | 23 | 62 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | 1 | 1 | 1 | ... | ... | 2 | 3 | 1 |
| ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | 1 | ... | ... | ... | ... | ... | 1 | 1 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Con.*) | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 9 | ..... | 2 | ..... | 2 | ..... | .... | .... |
| LOCKPORT | 16,581 | 21 | ..... | 7 | 33.3 | 3 | 145 | .... | 2 |
| NIAGARA FALLS | 19,457 | 32 | 20.0 | 11 | 34.4 | 3 | 283 | 2 | 4 |
| *Medina* | 4,716 | 8 | ..... | 2 | 25.0 | 1 | 125 | .... | .... |
| *Albion* | 4,477 | 3 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Brockport* | 3,400 | 6 | ..... | 1 | 16.7 | 3 | 167 | .... | .... |
| ROCHESTER | 162,608 | 220 | 16.5 | 31 | 14.0 | 45 | 50 | .... | .... |
| Palmyra | 3,758 | 3 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| *Newark* | 4,578 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Lyons | 5,824 | 9 | ..... | 2 | 22.2 | 3 | 111 | 1 | .... |
| *Clyde* | 2,507 | 4 | ..... | 3 | 75.0 | 0 | ..... | .... | .... |
| OSWEGO | 22,200 | 43 | 28.8 | 5 | 11.6 | 11 | 93 | 1 | 1 |
| *Fulton* | 5,281 | 9 | ..... | 0 | ..... | 2 | 333 | .... | .... |
| Richland | 3,535 | 4 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Rest of district | 247,000 | 309 | 14 0 | 60 | 20.0 | 94 | 57 | 1 | 1 |
| Totals for the state | 7,268,000 | 11,035 | 18.4 | 2,892 | 26.2 | 1,900 | 107 | 59 | 120 |
| Average for past five years | ..... | 10,735 | 19.0 | 2,839 | 26.3 | ..... | 92 | 68 | 89 |

FOR APRIL—(*Concluded*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | 2 | .... | 1 | 1 | 1 | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 3 | .... | 2 | 1 | 3 | 2 | .... | .... | 2 | 4 |
| .... | .... | .... | .... | .... | .... | .... | 3 | 4 | 3 | 1 | 3 | 1 | 1 | 4 | .... | 3 | 1 | 2 |
| .... | .... | .... | 1 | .... | .... | .... | .... | 1 | 2 | .... | 1 | .... | 1 | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | .... | .... | 1 | .... |
| .... | .... | 1 | 2 | 2 | 2 | 2 | 2 | 21 | 23 | 6 | 16 | 23 | 23 | 29 | 16 | 11 | 17 | 24 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | 1 | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 3 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 1 | 1 | 1 | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | 2 |
| .... | .... | .... | .... | 2 | .... | .... | .... | 1 | 4 | 1 | 3 | 2 | 7 | 12 | 3 | 3 | 1 | 2 |
| .... | .... | .... | .... | 1 | .... | 2 | .... | .... | 1 | .... | .... | 1 | 1 | 1 | .... | 2 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | .... | 2 | .... |
| .... | .... | .... | 5 | 1 | 4 | 3 | 1 | 48 | 25 | 2 | 19 | 20 | 44 | 40 | 19 | 16 | 21 | 39 |
| 16 | 42 | 219 | 109 | 62 | 78 | 273 | 200 | 1,899 | 1,296 | 101 | 613 | 867 | 1,058 | 1,268 | 423 | 481 | 447 | 1,404 |
| 26 | 2 | 83 | 143 | 54 | 96 | 286 | 143 | 2,149 | 1,187 | 102 | 713 | 769 | 972 | 1,188 | 347 | 454 | 516 | 1,348 |

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS.

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| MARITIME DISTRICT Totals | 3,852,922 | 5,798 | 17.7 | 1,836 | 31.6 | 588 | 142 | 26 | 30 |
| CITY OF NEW YORK Totals | 3,526,517 | 5,379 | 18.0 | 1,733 | 32.2 | 507 | 146 | 23 | 28 |
| BOROUGH OF MANHATTAN | 1,873,562 | 3,006 | 18.8 | 1,010 | 33.7 | 239 | 133 | 14 | 18 |
| BOROUGH OF THE BRONX | 222,121 | 374 | 20.0 | 97 | 26.0 | 32 | 245 | 2 | 2 |
| BOROUGH OF BROOKLYN | 1,209,064 | 1,714 | 16.6 | 549 | 32.0 | 189 | 157 | 7 | 8 |
| BOROUGH OF QUEENS | 162,834 | 202 | 15.6 | 60 | 30.0 | 26 | 85 | .... | ... |
| BOROUGH OF RICHMOND | 68,933 | 83 | 14.5 | 17 | 20.5 | 21 | 120 | .... | .... |
| Oyster Bay | 16,334 | 32 | ..... | 2 | 6.3 | 6 | ..... | .... | .... |
| Hempstead | 27,066 | 24 | ..... | 7 | ..... | 7 | ..... | .... | .... |
| North Hempstead | 12,048 | 13 | ..... | 3 | 23.0 | 1 | 152 | .... | .... |
| Southold | 8,301 | 12 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Sag Harbor* | 2,000 | 4 | ..... | 1 | 25.0 | 1 | 250 | .... | ... |
| Huntington | 9,483 | 6 | ..... | 1 | ..... | 2 | ..... | .... | .... |
| Brookhaven | 14,592 | 8 | ..... | 3 | ..... | 3 | ..... | .... | .... |
| YONKERS | 47,931 | 70 | 17.0 | 24 | 34.3 | 6 | 85 | 1 | .... |
| Greenburgh | 15,564 | 19 | ..... | 1 | 5.2 | 4 | 52 | .... | .... |
| MOUNT VERNON | 20,346 | 30 | 18.0 | 13 | 43.3 | 2 | 66 | 1 | .... |
| *Port Chester* | 7,440 | 12 | ..... | 4 | 33.3 | 4 | 83 | .... | .... |
| *Ossining* | 7,939 | 17 | ..... | 4 | 23.5 | 5 | 353 | .... | .... |
| NEW ROCHELLE | 14,720 | 18 | ..... | 4 | 22.2 | 2 | 166 | .... | 1 |
| *Peekskill* | 10,358 | 22 | ..... | 7 | 31.8 | 7 | 182 | .... | 1 |
| *White Plains* | 7,900 | 11 | ..... | 1 | 9.0 | 3 | ..... | .... | .... |
| Rest of district | 85,000 | 121 | 16.2 | 26 | 21.5 | 27 | 60 | 1 | .... |
| HUDSON VALLEY DISTRICT Totals | 690,143 | 954 | 16.3 | 146 | 15.3 | 207 | 75 | 3 | 17 |
| ALBANY | 94,151 | 139 | 17.4 | 21 | 15.0 | 15 | 65 | .... | 2 |
| COHOES | 24,000 | 27 | 13.2 | 5 | 19.0 | 5 | 147 | 1 | 1 |
| TROY (including *Lansingburgh*) | 75,057 | 130 | 20.0 | 20 | 15.4 | 15 | 93 | .... | 4 |
| WATERVLIET | 14,321 | 17 | ..... | 5 | 30.0 | 2 | 118 | .... | .... |
| *Green Island* | 4,770 | 12 | ..... | 4 | 33.3 | 1 | 250 | .... | .... |
| *Hoosic Falls* | 5,671 | 6 | ..... | 1 | 16.7 | 0 | ..... | .... | .... |
| RENSSELAER | 7,466 | 11 | ..... | 4 | 36.3 | 1 | 273 | .... | 1 |
| Coxsackie | 4,102 | 6 | ..... | 2 | ..... | 0 | ..... | .... | 2 |
| *Catskill* | 5,486 | 15 | ..... | 4 | 26.7 | 3 | 200 | .... | .... |
| HUDSON | 9,528 | 17 | ..... | 4 | 23.5 | 5 | 180 | .... | 1 |
| KINGSTON | 24,535 | 39 | 18.7 | 7 | 18.0 | 5 | 25 | .... | .... |
| *Ellenville* | 3,000 | 8 | ..... | 0 | ..... | 3 | ... | .... | .... |
| Marbletown | 3,511 | 4 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Rosendale | 6,278 | 6 | ..... | 0 | ..... | 2 | 167 | .... | .... |
| Esopus | 4,907 | 9 | ..... | 3 | 33.3 | 2 | 111 | .... | .... |
| *Saugerties* | 3,700 | 7 | ..... | 1 | 14.2 | 1 | 142 | .... | .... |
| POUGHKEEPSIE | 24,029 | 38 | 15.6 | 4 | 10.5 | 11 | 105 | .... | .... |
| Fishkill | 13,016 | 20 | ..... | 3 | 15.0 | 0 | 150 | .... | .... |
| *Wappingers Falls* | 3,504 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| NEWBURGH | 25,000 | 32 | 15.0 | 5 | 15.6 | 5 | 32 | ... | .... |
| *Port Jervis* | 9,385 | 17 | ..... | 3 | 18.0 | 7 | ..... | ... | .... |
| MIDDLETOWN | 14,522 | 20 | ..... | 4 | 20.0 | 7 | ... | .... | .... |
| Warwick | 6,403 | 7 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Goshen* | 4,564 | 9 | ..... | 1 | 11.0 | 0 | ..... | .... | .... |

## STATE DEPARTMENT OF HEALTH

### *cts, cities, villages and towns during May*, 1901

**in *italic* and towns in roman type]**

| Zymotic Diseases | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 198 | 39 | 34 | 27 | 204 | 188 | 922 | 719 | 49 | 257 | 447 | 551 | 554 | 233 | 354 | 114 | 775 |
| 193 | 39 | 31 | 20 | 198 | 179 | 871 | 659 | 45 | 235 | 422 | 506 | 483 | 214 | 325 | 93 | 741 |
| 88 | 21 | 25 | 12 | 116 | 99 | 528 | 334 | 23 | 156 | 230 | 315 | 267 | 131 | 162 | 50 | 411 |
| 12 | ... | ... | ... | 7 | 9 | 40 | 102 | ... | 8 | 14 | 17 | 31 | 10 | 49 | 5 | 8 |
| 87 | 17 | 4 | 6 | 65 | 69 | 266 | 194 | 17 | 60 | 151 | 142 | 157 | 64 | 84 | 26 | 284 |
| 4 | 1 | 1 | 2 | 5 | ... | 32 | 21 | 4 | 8 | 17 | 24 | 21 | 4 | 20 | 5 | 29 |
| 2 | ... | 1 | ... | 5 | 2 | 5 | 8 | 1 | 3 | 10 | 8 | 7 | 5 | 10 | 7 | 9 |
| ... | ... | ... | ... | ... | ... | 3 | 9 | ... | 1 | 5 | 5 | 2 | 4 | ... | 2 | 1 |
| 2 | ... | ... | 1 | 1 | 1 | 4 | 2 | ... | ... | 1 | 2 | 4 | ... | 2 | 2 | 2 |
| ... | ... | ... | 1 | ... | 1 | ... | 2 | 1 | 1 | ... | 1 | 2 | 2 | 2 | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 2 | ... | 1 | ... | 1 | 3 | 2 | 2 | ... | 1 |
| ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 2 | 1 | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | 2 | 1 | ... | ... | ... | ... | 1 | ... | 1 | 2 | 1 |
| 1 | ... | 1 | ... | ... | 3 | 7 | 12 | ... | 5 | 1 | 6 | 17 | 3 | 2 | 1 | 10 |
| ... | ... | ... | ... | 1 | ... | 1 | 3 | ... | 2 | 4 | ... | 2 | ... | 4 | 2 | ... |
| ... | ... | ... | ... | 1 | ... | 11 | 2 | ... | 1 | ... | 1 | 6 | 2 | 3 | ... | 2 |
| ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | 1 | 4 | 1 | ... | 1 | 2 |
| ... | ... | 2 | 2 | ... | ... | 1 | 1 | ... | ... | 1 | 1 | 4 | ... | 1 | ... | 2 |
| ... | ... | ... | ... | 1 | 1 | ... | 4 | ... | 1 | ... | 4 | 4 | 1 | 1 | ... | ... |
| 2 | ... | ... | 1 | ... | ... | 1 | 4 | ... | 1 | 2 | 3 | 2 | 1 | 1 | 1 | 2 |
| ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 3 | 2 | 1 | ... | 1 | ... | 2 |
| ... | ... | ... | 2 | 1 | 3 | 19 | 16 | 3 | 9 | 7 | 16 | 17 | 2 | 9 | 8 | 8 |
| 6 | 9 | 2 | 4 | 18 | 8 | 93 | 131 | 12 | 79 | 79 | 126 | 121 | 42 | 56 | 57 | 89 |
| 1 | 2 | ... | 2 | 1 | 1 | 14 | 23 | 3 | 9 | 21 | 17 | 16 | 5 | 13 | 3 | 6 |
| ... | ... | ... | ... | 1 | 1 | 4 | 5 | ... | 2 | 1 | 2 | 4 | ... | 1 | 1 | 3 |
| 1 | 3 | ... | 1 | 2 | 1 | 20 | 20 | 1 | 11 | 10 | 19 | 17 | 4 | 2 | 4 | 10 |
| ... | ... | ... | ... | ... | 2 | 3 | 4 | 1 | 1 | 1 | 1 | 1 | ... | ... | 1 | 2 |
| ... | 2 | 1 | ... | ... | ... | 2 | 1 | ... | ... | 3 | ... | ... | ... | 1 | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 3 | 1 | ... | ... | 1 |
| ... | ... | ... | ... | 1 | ... | ... | 2 | ... | 1 | ... | ... | 1 | 1 | 1 | 1 | 1 |
| ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 |
| ... | ... | ... | ... | 3 | ... | ... | 2 | ... | 2 | 1 | 2 | 2 | ... | ... | 1 | 2 |
| ... | ... | ... | ... | 1 | 1 | 1 | 2 | ... | 1 | ... | 2 | 4 | ... | 2 | 2 | ... |
| 1 | ... | ... | ... | ... | ... | 2 | 5 | 1 | 5 | 4 | 6 | 5 | 4 | 1 | ... | 5 |
| ... | ... | ... | ... | ... | ... | 2 | 1 | ... | 1 | 2 | 1 | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | 2 | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | 1 | ... | 1 | ... | ... | 1 | 1 | ... | ... | ... | 1 | 1 | ... |
| ... | ... | ... | ... | 1 | ... | 1 | ... | ... | 3 | ... | ... | 1 | 1 | ... | ... | 2 |
| 1 | ... | ... | ... | ... | ... | ... | 2 | ... | 1 | ... | 1 | 1 | ... | 1 | ... | ... |
| ... | ... | ... | 1 | 3 | ... | 8 | 4 | ... | 3 | 2 | 4 | 2 | 2 | 5 | 2 | 2 |
| 1 | ... | ... | ... | 1 | ... | 1 | 4 | 1 | 3 | 2 | 1 | 3 | ... | 1 | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 |
| ... | ... | ... | ... | 1 | ... | 3 | 5 | ... | 2 | 2 | 4 | 7 | 3 | 1 | 1 | 3 |
| ... | ... | ... | ... | ... | ... | 1 | 5 | ... | 2 | 3 | 4 | ... | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | 2 | 2 | ... | 2 | ... | 3 | 2 | 1 | 2 | 1 | 5 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 2 | ... | ... | 3 | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | ... | 2 | 1 | 2 | ... | ... |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| **HUDSON VALLEY DIST.—(*Con.*)** | | | | | | | | | |
| Montgomery | 5,939 | 11 | ..... | 1 | 9.0 | 1 | 90 | .... | 1 |
| Haverstraw | 9,874 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Nyack* | 4,275 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Ramapo | 7,502 | 16 | ..... | 2 | 12.5 | 7 | ..... | .... | .... |
| Rest of district | 271,800 | 324 | 14.0 | 42 | 13.0 | 105 | 25 | 1 | 5 |
| **ADIRONDACK AND NORTHERN DISTRICT** | | | | | | | | | |
| Totals | 394,762 | 510 | 15.0 | 112 | 22.0 | 145 | 80 | 1 | 11 |
| WATERTOWN | 21,700 | 22 | 12.5 | 5 | 23.8 | 6 | 100 | .... | 2 |
| Ellisburgh | 3,888 | 5 | ..... | 2 | 40.0 | 2 | ..... | .... | .... |
| Cape Vincent | 3,882 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| Clayton | 4,318 | 6 | ..... | 1 | 16.7 | 0 | 167 | .... | .... |
| OGDENSBURGH | 12,633 | 31 | ..... | 6 | 19.0 | 3 | 33 | .... | 1 |
| Gouverneur | 6,000 | 6 | ..... | 2 | 33.3 | 0 | ..... | .... | .... |
| *Potsdam* | 3,943 | 7 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Canton | 6,387 | 11 | ..... | 2 | 18.2 | 2 | ..... | .... | .... |
| *Malone* | 5,935 | 7 | ..... | 1 | 14.2 | 1 | 142 | .... | 1 |
| *Plattsburgh* | 8,434 | 12 | ..... | 2 | 16.7 | 0 | 167 | .... | 1 |
| *Glens Falls* | 12,613 | 30 | ..... | 7 | 23.3 | 7 | 100 | .... | .... |
| *Whitehall* | 4,377 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Fort Edward | 5,216 | 9 | ..... | 2 | 22.2 | 2 | 111 | .... | .... |
| *Sandy Hill* | 4,473 | 5 | ..... | 2 | 50.0 | 1 | 250 | .... | 1 |
| Granville | 5,217 | 4 | ..... | 1 | 11.1 | 0 | ..... | .... | .... |
| Greenwich | 4,172 | 9 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Lowville | 3,746 | 8 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Rest of district | 278,943 | 326 | 14 0 | 78 | 24.5 | 111 | 90 | 1 | 5 |
| **MOHAWK VALLEY DISTRICT** | | | | | | | | | |
| Totals | 408,973 | 564 | 16.5 | 103 | 18.5 | 120 | 70 | .... | 5 |
| SCHENECTADY | 31,682 | 47 | 17.3 | 7 | 15.0 | 8 | 22 | .... | .... |
| Cobleskill | 3,973 | 4 | ..... | 0 | ..... | 0 | 250 | .... | .... |
| AMSTERDAM | 20,929 | 24 | 13 5 | 4 | 16.6 | 2 | 120 | .... | 1 |
| *Fort Plain* | 2,444 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| JOHNSTOWN | 10,130 | 10 | ..... | 2 | 20 0 | 3 | ..... | .... | .... |
| GLOVERSVILLE | 18,349 | 24 | ..... | 4 | 16.7 | 2 | 83 | .... | .... |
| LITTLE FALLS | 10,381 | 11 | ..... | 5 | 41.8 | 1 | 364 | .... | 1 |
| *Herkimer* | 5,555 | 7 | ..... | 2 | 28.5 | 1 | ..... | .... | .... |
| *Ilion* | 5,138 | 5 | ..... | 2 | 40.0 | 3 | 200 | .... | .... |
| UTICA | 56,383 | 83 | 16.0 | 15 | 18.1 | 21 | 50 | .... | .... |
| Whitestown | 6,235 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| ROME | 15,343 | 17 | ..... | 0 | ..... | 7 | 60 | .... | .... |
| Boonville | 3,332 | 6 | ..... | 1 | 16.7 | 3 | ..... | .... | .... |
| Camden | 3,745 | 7 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Waterford | 6,157 | 11 | ..... | 2 | 18.2 | 0 | 90 | .... | 1 |
| *Mechanicville* | 4,695 | 7 | ..... | 3 | 42.8 | 1 | 128 | .... | .... |
| *Ballston Spa* | 3,923 | 4 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Saratoga Springs* | 12,409 | 29 | ..... | 6 | 20.0 | 6 | 250 | .... | .... |
| Rest of district | 188,170 | 263 | 16.0 | 50 | 20.0 | 79 | 50 | .... | 2 |
| **SOUTHERN TIER DISTRICT** | | | | | | | | | |
| Totals | 429,434 | 515 | 14.2 | 97 | 19.0 | 127 | 86 | 4 | 7 |
| BINGHAMTON | 39,647 | 71 | 21.0 | 16 | 22.0 | 12 | 140 | .... | 2 |
| *Owego* | 5,039 | 5 | ..... | 2 | 40.0 | 1 | 200 | 1 | .... |
| Candor | 3,330 | 2 | ..... | 1 | 50.0 | 1 | ..... | .... | .... |
| *Waverly* | 4,465 | 7 | ..... | 1 | 14.2 | 0 | ..... | .... | .... |
| ELMIRA | 35,672 | 43 | 14.0 | 14 | 32 5 | 7 | 70 | .... | .... |

FOR MAY—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Miscellaneous diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 2 | ... | 1 | 1 | ... | 1 | 2 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 | ... | 5 | 5 | 1 | ... | ... | 2 |
| 1 | ... | 1 | 1 | 1 | ... | 2 | 2 | 26 | 37 | 3 | 23 | 24 | 49 | 43 | 16 | 17 | 35 | 37 |
| ... | ... | ... | 9 | 1 | 6 | 7 | 5 | 59 | 59 | 5 | 45 | 36 | 69 | 59 | 12 | 22 | 36 | 68 |
| ... | ... | ... | ... | ... | ... | ... | ... | 3 | 3 | ... | ... | 2 | 5 | 1 | ... | 1 | 2 | 3 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | 2 | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 2 | ... | 1 | ... | ... | ... | 1 |
| ... | ... | ... | 1 | ... | ... | ... | ... | 1 | 1 | ... | ... | 2 | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 3 | 4 | 1 | 1 | 1 | 4 | 6 | 1 | 3 | 1 | 5 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | 1 | ... | ... | 3 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 2 | ... | ... | 2 | ... | 1 | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | 1 | ... | ... | 2 | ... | ... | 1 | 1 | 3 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 2 | ... | 1 | ... | 2 | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 2 | ... | 1 | 1 | 2 | 1 | 1 | 1 | ... | 1 |
| ... | ... | ... | 3 | ... | ... | ... | ... | 6 | 1 | 1 | 1 | 2 | 4 | 3 | 1 | 2 | 3 | 3 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | 2 | 1 | 1 | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | 1 | 2 | ... | 2 | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 2 | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 3 | ... | ... | ... | 1 | 1 | ... | 2 | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 4 | ... | ... | ... | ... |
| ... | ... | ... | 5 | 1 | 6 | 7 | 4 | 33 | 36 | 2 | 37 | 23 | 44 | 35 | 7 | 9 | 28 | 46 |
| ... | 1 | 6 | 10 | ... | 2 | 8 | 8 | 70 | 65 | 3 | 44 | 45 | 66 | 75 | 21 | 32 | 43 | 60 |
| ... | ... | ... | ... | ... | ... | ... | 1 | 9 | 5 | ... | 5 | 5 | 5 | 4 | 1 | 4 | 3 | 5 |
| ... | ... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | 1 | ... | ... |
| ... | ... | ... | 1 | ... | ... | ... | 1 | 4 | 3 | ... | 4 | 2 | 2 | 3 | ... | 1 | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | ... | ... | ... | 2 | 1 | 1 | ... | 1 | 2 |
| ... | 1 | ... | ... | ... | 1 | ... | ... | 1 | 4 | ... | ... | 2 | 5 | 2 | ... | 4 | ... | 4 |
| ... | ... | 1 | ... | ... | ... | 2 | ... | 2 | 1 | 1 | ... | ... | 1 | 1 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 2 | ... | 1 | ... | ... | 1 | 1 | 1 | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | 2 | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | 1 | ... | ... | 1 | 2 | 19 | 6 | 1 | 14 | 8 | 7 | 12 | ... | 2 | 2 | 8 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 1 | ... | ... | 2 |
| ... | ... | 1 | ... | ... | ... | ... | ... | 1 | 2 | ... | 1 | 2 | 8 | 1 | ... | 1 | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 2 | 2 | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | 1 | 2 | 1 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | 4 | ... | 1 | ... | 1 | 1 | ... | ... | ... | 1 |
| ... | ... | ... | 1 | ... | ... | ... | ... | 1 | 2 | ... | 2 | ... | ... | ... | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... |
| ... | ... | ... | 4 | ... | ... | 3 | ... | 3 | 3 | ... | ... | 3 | 2 | 3 | 1 | 2 | 3 | 2 |
| ... | ... | 3 | 3 | ... | 1 | 1 | 3 | 29 | 30 | 1 | 13 | 19 | 29 | 36 | 14 | 15 | 31 | 33 |
| ... | ... | 3 | 6 | 2 | 11 | 5 | 6 | 55 | 46 | 6 | 46 | 44 | 62 | 80 | 18 | 21 | 26 | 67 |
| ... | ... | 1 | 1 | ... | 1 | 2 | 2 | 6 | 6 | 1 | 6 | 6 | 7 | 15 | 2 | 2 | 5 | 6 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | ... | 2 | 1 | ... | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | 3 | ... | ... | 3 | 8 | ... | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 10 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| HORNELLSVILLE | 12,000 | 16 | ..... | 1 | 6.5 | 4 | 65 | .... | .... |
| *Bath* | 5,000 | 11 | ..... | 0 | ..... | 5 | ..... | .... | .... |
| CORNING | 11,061 | 15 | ..... | 4 | 26.7 | 3 | 135 | .... | .... |
| Wellsville | 5,000 | 10 | ..... | 3 | 30.0 | 3 | 100 | .... | .... |
| OLEAN | 9,462 | 10 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Salamanca* | 4,251 | 9 | ..... | 2 | 22.2 | 2 | ..... | .... | .... |
| DUNKIRK | 11,616 | 17 | ..... | 5 | 30.0 | 1 | 118 | .... | 1 |
| JAMESTOWN | 22,892 | 17 | ..... | 6 | 37.0 | 5 | 120 | 1 | .... |
| *Westfield* | 2,430 | 4 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Fredonia* | 4,125 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Rest of district | 248,500 | 276 | 13.0 | 42 | 15.0 | 80 | 87 | 2 | 4 |
| EAST CENTRAL DISTRICT Totals | 401,082 | 516 | 15.0 | 71 | 13.8 | 158 | 50 | .... | 6 |
| SYRACUSE | 108,374 | 129 | 14.0 | 21 | 15.2 | 20 | 40 | .... | 1 |
| *Baldwinsville* | 3,000 | 7 | ..... | 1 | 14.2 | 3 | ..... | .... | .... |
| De Witt | 5,435 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| CORTLAND | 9,014 | 14 | ..... | 4 | 28.5 | 2 | 71 | .... | .... |
| *Homer* | 2,381 | 6 | ..... | 1 | 16.7 | 2 | 167 | .... | .... |
| *Oneida* | 7,942 | 12 | ..... | 2 | ..... | 5 | ..... | .... | .... |
| Hamilton | 3,744 | 7 | ..... | 0 | ..... | 2 | 142 | .... | .... |
| Cazenovia | 3,830 | 7 | ..... | 2 | 28.5 | 1 | ..... | .... | .... |
| Brookfield | 2,726 | 6 | ..... | 0 | ..... | 4 | 167 | .... | .... |
| *Norwich* | 5,766 | 10 | ..... | 4 | 40.0 | 4 | 200 | .... | .... |
| *Oneonta* | 7,147 | 9 | ..... | 2 | 22.2 | 1 | ..... | .... | .... |
| Worcester | 2,409 | 7 | ..... | 0 | ..... | 3 | 142 | .... | .... |
| *Cooperstown* | 2,368 | 3 | ..... | 2 | 66.6 | 0 | ..... | .... | .... |
| Walton | 4,869 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Delhi | 3,243 | 9 | ..... | 1 | 11.1 | 4 | 111 | .... | 1 |
| Liberty | 4,568 | 13 | ..... | 1 | 7.5 | 1 | 75 | .... | 1 |
| Rest of district | 225,844 | 274 | 14 3 | 30 | 11.0 | 106 | 33 | .... | 3 |
| WEST CENTRAL DISTRICT Totals | 405,946 | 422 | 15.7 | 51 | 12.2 | 161 | 45 | 1 | 1 |
| AUBURN | 30,345 | 30 | 12.0 | 7 | 23.3 | 6 | 66 | 1 | .... |
| ITHACA | 13,136 | 25 | ..... | 2 | 8.0 | 7 | ..... | .... | .... |
| Hector | 4,137 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| *Waterloo* | 4,256 | 9 | ..... | 2 | 22.2 | 5 | 111 | .... | .... |
| *Seneca Falls* | 6,519 | 4 | ..... | 1 | 25.0 | 0 | ..... | .... | .... |
| GENEVA | 10,433 | 12 | ..... | 1 | 8.5 | 4 | 166 | .... | 1 |
| *Canandaigua* | 6,151 | 3 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Manchester | 4,733 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Phelps | 4,788 | 8 | ..... | 1 | 12.5 | 2 | ..... | .... | .... |
| *Penn Yan* | 4,650 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Batavia* | 9,180 | 9 | ..... | 1 | 11.1 | 5 | ..... | .... | .... |
| *Dansville* | 3,633 | 4 | ..... | 0 | ..... | 3 | 250 | .... | .... |
| *Le Roy* | 3,144 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| Warsaw | 4,341 | 7 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Rest of district | 206,500 | 290 | 16.5 | 34 | 11.5 | 118 | 45 | .... | .... |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 879,022 | 1,048 | 14.0 | 204 | 20.0 | 244 | 90 | 8 | 19 |
| BUFFALO | 352,387 | 425 | 14.4 | 120 | 28.2 | 63 | 100 | 2 | 5 |
| TONAWANDA | 7,421 | 12 | ..... | 1 | 8.3 | 2 | 83 | .... | .... |
| *Amherst* | 4,223 | 5 | ..... | 0 | ..... | 4 | ..... | .... | .... |

FOR MAY—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- |
| --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 3 | --- | 2 | 1 | 1 | 1 | --- | 1 | 2 | 3 |
| --- | --- | --- | --- | --- | --- | --- | --- | 3 | 1 | --- | 1 | 1 | --- | 3 | 1 | --- | 1 | --- |
| --- | --- | --- | 2 | --- | --- | --- | --- | --- | 1 | --- | --- | 5 | 1 | 2 | --- | --- | --- | 4 |
| --- | --- | --- | --- | --- | 1 | --- | --- | 2 | --- | --- | 1 | 1 | 1 | 2 | --- | --- | --- | 2 |
| --- | --- | --- | --- | --- | --- | --- | --- | 3 | --- | --- | 1 | --- | 1 | 1 | --- | 2 | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | 1 | 2 | 2 | --- | --- | 1 | --- | 1 |
| --- | --- | --- | --- | --- | 1 | --- | --- | 3 | 3 | 2 | 2 | --- | 4 | --- | --- | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | 1 | --- | 3 | --- | --- | 2 | 3 | 2 | 1 | --- | 1 | --- | 3 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | --- | 1 | --- | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- |
| --- | --- | 2 | 2 | 2 | 5 | 2 | 4 | 28 | 19 | 3 | 24 | 20 | 37 | 49 | 13 | 12 | 16 | 32 |
| --- | --- | 4 | 8 | 2 | 2 | 1 | 2 | 52 | 52 | 4 | 45 | 26 | 79 | 80 | 33 | 27 | 39 | 54 |
| --- | --- | 1 | --- | 1 | --- | 1 | 1 | 9 | 17 | --- | 10 | 5 | 23 | 17 | 9 | 8 | 9 | 17 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | 1 | 1 | 1 | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | --- |
| --- | --- | --- | 1 | --- | --- | --- | --- | 2 | 1 | --- | 1 | 1 | 1 | 2 | 1 | --- | --- | 4 |
| --- | --- | --- | 1 | --- | --- | --- | --- | 2 | --- | 1 | 1 | --- | --- | --- | --- | --- | --- | 1 |
| --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | --- | 1 | --- | 1 | 3 | --- | 1 | 3 | 1 |
| --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 | --- | 2 | 1 | 1 | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 4 | --- | --- | 1 | 2 |
| --- | --- | --- | 1 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | --- | 2 | --- |
| --- | --- | 2 | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | --- | 2 | 2 | --- | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | 4 | --- | --- | 1 | 1 | --- | 1 | --- | 1 | --- | 1 |
| --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 3 | --- | --- | --- | 2 | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 2 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 1 | 1 | 2 | 1 | 1 | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | 8 | --- | 1 | --- | --- | --- | --- | 1 | --- | 2 |
| --- | --- | --- | 4 | --- | 2 | --- | 1 | 33 | 21 | 3 | 27 | 17 | 44 | 47 | 18 | 14 | 19 | 21 |
| 1 | --- | 2 | 6 | 1 | 3 | 2 | 2 | 37 | 41 | 4 | 41 | 22 | 56 | 86 | 18 | 14 | 37 | 47 |
| --- | --- | 1 | --- | --- | --- | --- | --- | 8 | 2 | 1 | 3 | 1 | 1 | 4 | 3 | --- | 2 | 3 |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | 3 | --- | 3 | 1 | 5 | 6 | --- | 2 | 1 | 3 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | 2 | 1 | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | 1 | --- | 1 | 1 | 1 | --- | 3 | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | 1 | 1 |
| --- | --- | --- | 1 | --- | --- | --- | --- | 2 | --- | --- | 3 | 1 | 1 | 2 | --- | --- | 1 | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 2 | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | 1 | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | 2 | --- | --- | 1 | 2 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 2 | --- | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | 2 | --- | --- | 3 | --- | 1 | --- | --- | --- | 2 |
| --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | --- | --- | 1 | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 2 | --- | --- | 2 | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 3 | 3 | --- | --- | --- | --- |
| 1 | --- | 1 | 5 | 1 | 2 | 2 | 1 | 21 | 33 | 3 | 28 | 14 | 39 | 60 | 12 | 9 | 24 | 34 |
| 1 | --- | 7 | 8 | 2 | 14 | 18 | 17 | 118 | 111 | 9 | 92 | 70 | 105 | 140 | 57 | 64 | 63 | 125 |
| --- | --- | 5 | 3 | 1 | 7 | 10 | 10 | 67 | 39 | 4 | 31 | 27 | 29 | 50 | 24 | 25 | 23 | 63 |
| 1 | --- | --- | --- | --- | --- | --- | --- | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | 1 | --- | --- | 1 | --- | --- | 1 | --- |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years. | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths form all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| **LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*)** | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 6 | ..... | 1 | 16.7 | 2 | 167 | .. | 1 |
| LOCKPORT | 16,581 | 20 | ..... | 3 | 15.0 | 5 | 200 | .. | 3 |
| NIAGARA FALLS | 19,457 | 16 | ..... | 3 | 18.5 | 0 | 50 | .. | 2 |
| *Medina* | 4,716 | 4 | ..... | 1 | 25.0 | 1 | 250 | .. | .... |
| *Albion* | 4,477 | 4 | ..... | 1 | 25.0 | 0 | ..... | .. | .... |
| *Brockport* | 3,400 | 9 | ..... | 0 | ..... | 3 | ..... | .. | .... |
| ROCHESTER | 162,608 | 185 | 13.4 | 30 | 16.2 | 32 | 54 | 2 | 2 |
| Palmyra | 3,758 | 13 | ..... | 0 | ..... | 6 | 85 | 1 | .... |
| *Newark* | 4,578 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Lyons | 5,824 | 12 | ..... | 1 | 9 0 | 4 | 85 | .... | .... |
| *Clyde* | 2,507 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| OSWEGO | 22,200 | 26 | ..... | 7 | ..... | 6 | ..... | .... | .... |
| *Fulton* | 5,281 | 6 | ..... | 0 | ..... | 2 | 166 | .... | .... |
| Richland | 3,535 | 6 | ..... | 1 | 16.7 | 2 | 167 | 1 | .... |
| Rest of district | 247,000 | 296 | 13.8 | 85 | 12.0 | 105 | 75 | 2 | 6 |
| Totals for the state | 7,268,000 | 10,327 | 16.6 | 2,620 | 25.4 | 1,750 | 112 | 43 | 96 |
| Average for past 5 years | ..... | 9,810 | 17.0 | 2,705 | 27.5 | ..... | 98 | 61 | 81 |

REMARKS—The weather during the three months of excessive mortality from grippe and pneumonia was characterized by deficiency of precipitation in the eastern and northern part of the state in January and February, followed by excess in March, while in the west there was excess throughout the period, the total average being below the normal. The humidity was moderately high and the atmospheric pressure low. The average of the number of clear days noted in the five stations was but 15 during the three months, though in the eastern part of the state there were many more than elsewhere, and there was an average of 51 cloudy days. Northwest winds prevailed in the east, southeast in the north and westerly in the central and west. The temperature was below the normal in the first two months and above it in March, the average for the period being below normal ranges, being not excessive. The lowest temperature noted was 6 degrees below zero, in Albany, in January, and highest 62 degrees, in Buffalo, in March.

Acute respiratory diseases caused 7600 deaths during this period out of a total mortality of 35,500, or 22 per cent. Pneumonia caused about 5000 deaths during the three months, or 65 per cent of the acute respiratory mortality, as reported in the city of New York, that of the rest of the state being not less than 75 per cent. This represents a mortality for the year of more than 20,000 for the state, against 12,000 from consumption. Grippe is estimated to have increased the mortality of the three months by 6000, many of the deaths being from pneumonia. The epidemic of this season, of grippe, commencing in December, has probably caused not less than 7000 deaths; its chief severity fell upon January and it continued through April.

During the four years preceding 1889, when recurring epidemics of grippe began, there were on an average 4350 deaths yearly in the three months of January, February and March, or 16 per cent of the total mortality, against 22 per cent now. During the same period consumption caused 13 per cent of the total mortality then, against less than 11 per cent in the three months of this year. The actual mortality from consumption in these three months fifteen years ago was 3100 or but 650 less than for

AY—(*Concluded*)

| ZYMOTIC DISEASES | | | | | | OTHER CAUSES OF DEATH | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | ..... | 1 | .... | ..... | .... | ..... | 1 | 1 | .... | 1 | 1 |
| .... | .... | .... | .... | 1 | .... | 1 | 5 | .... | 2 | .... | 2 | 1 | 2 | .... | 2 | 1 |
| 1 | .... | .... | .... | .... | 1 | 2 | 3 | .... | 1 | 2 | ..... | ..... | 1 | 1 | .... | 2 |
| .... | .... | .... | 1 | .... | .... | ..... | ..... | .... | ..... | .... | 1 | ..... | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | ..... | 1 | .... | ..... | 1 | ..... | 1 | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 1 | 1 | .... | ..... | 2 | 2 | 1 | .... | 1 | 1 | .... |
| 1 | .... | .... | .... | 2 | 3 | 13 | 26 | 1 | 27 | 12 | 17 | 29 | 10 | 8 | 1 | 20 |
| .... | .... | .... | .... | .... | .... | ..... | 2 | .... | ..... | 1 | ..... | 4 | .... | 2 | 12 | 2 |
| .... | .... | .... | .... | .... | .... | ..... | 1 | .... | ..... | 1 | ..... | ..... | .... | .... | .... | .... |
| .... | 1 | .... | .... | .... | .... | ..... | ..... | .... | 1 | 2 | 2 | 4 | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | ..... | .... | .... | .... | 1 |
| .... | .... | 1 | 1 | .... | 1 | 1 | 5 | .... | 2 | .... | 3 | 3 | 2 | 1 | 2 | 4 |
| .... | .... | .... | .... | 1 | .... | ..... | 1 | .... | ..... | .... | 2 | ..... | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | ..... | 1 | .... | 3 | .... | ..... | ..... | .... | .... | 1 | .... |
| .... | 4 | .... | 5 | 4 | 2 | 31 | 22 | 3 | 23 | 21 | 46 | 44 | 15 | 24 | 16 | 28 |
| 226 | 95 | 44 | 69 | 263 | 236 | 1,406 | 1,224 | 92 | 649 | 769 | 1,114 | 1,195 | 434 | 590 | 415 | 1,285 |
| 87 | 130 | 40 | 86 | 297 | 145 | 1,539 | 1,166 | 89 | 696 | 725 | 916 | 1,111 | 368 | 530 | 459 | 1,241 |

ie period this year, whilst the mortality from acute respiratory diseases is d by more than 3000.

ilid mortality is very low, but 23 per cent of the deaths of the three months g under the age of five years, against nearly 33 per cent in the earlier years; ial mortality under five years was almost identical with the average for the onths in 1886-9. The deaths of advanced age were high, 7322 above the age ty years, or 21 per cent of the total; many of these were from pneumonia.

elative zymotic mortality was low, about half that of the same period before pe epidemics, viz: 8.8 per cent of the total deaths, against 16.4 per cent. More- e actual number of deaths during the three months from zymotic diseases was than that of the yearly average for the same months in 1886-9.

distribution the proportion of acute respiratory mortality was highest in the districts, 22 to 24 per cent of the total deaths, and lowest in the northern and western, 20 per cent.

g the month of May there were 980 deaths from pneumonia. These were 70 of the acute respiratory mortality. In New York city 65 per cent of the deaths as acute respiratory were from pneumonia; in the Lake Ontario district, 70 t; and in the rest of the state, 82 per cent, the remaining deaths from this ing from bronchitis mostly.

pox has been reported during the month from Southold, Great Neck, Mineola, ad and Hempstead, on Long Island, in all 7 cases; Ravena, Poughkeepsie, , Irvington and Nyack, along the Hudson valley, 11 cases; places in the town apo (7 cases), Pearl River, Port Jervis, Goshen, Middletown, the Elmira atory, in Orange and Chemung counties, in all 14 cases, including Ramapo; and Hinsdale, Allegany county, 2; the towns of Palatine and Warren, 2; t, Mineville and Rouses Point, 8 cases; and at Silver Creek, Chautauqua county, er of mild cases. Besides these twenty-four places there have continued to be Cohoes, Albany, Oneonta and Rochester.

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS.

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| MARITIME DISTRICT Totals | 3,852,922 | 5,660 | 17.8 | 1,796 | 31.8 | 525 | 170 | 27 | 31 |
| CITY OF NEW YORK Totals | 3,526,517 | 5,307 | 18.2 | 1,718 | 32.4 | 465 | 173 | 25 | 29 |
| BOROUGH OF MANHATTAN | 1,873,562 | 2,872 | 18.7 | 978 | 34.0 | 225 | 156 | 12 | 13 |
| BOROUGH OF THE BRONX | 222,124 | 383 | 21.5 | 96 | 25.2 | 33 | 368 | 7 | 1 |
| BOROUGH OF BROOKLYN | 1,209,064 | 1,771 | 17.8 | 569 | 32.2 | 177 | 191 | 5 | 11 |
| BOROUGH OF QUEENS | 162,834 | 192 | 14.3 | 47 | 24.7 | 19 | 105 | 1 | 3 |
| BOROUGH OF RICHMOND | 68,933 | 89 | 15.7 | 28 | 30.0 | 11 | 110 | .... | 1 |
| Oyster Bay | 16,334 | 12 | ..... | 1 | ..... | 5 | ..... | .... | .... |
| Hempstead | 27,066 | 14 | ..... | 3 | 21.5 | 1 | 215 | 1 | 1 |
| North Hempstead | 12,048 | 15 | ..... | 3 | 20.0 | 4 | 65 | .... | .... |
| Southold | 8,301 | 9 | ..... | 2 | 22.2 | 0 | ..... | .... | .... |
| *Sag Harbor* | 2,000 | 2 | ..... | 0 | ..... | 1 | 500 | .... | .... |
| Huntington | 9,483 | 8 | ..... | 1 | 12.5 | 3 | ..... | .... | .... |
| Brookhaven | 14,592 | 18 | ..... | 6 | 33.3 | 3 | ..... | .... | .... |
| YONKERS | 47,931 | 68 | 17.2 | 15 | 22.0 | 6 | 175 | .... | .... |
| Greenburgh | 15,564 | 10 | ..... | 3 | 30.0 | 3 | ..... | .... | .... |
| MOUNT VERNON | 20,346 | 17 | ..... | 5 | 30.0 | 3 | 118 | .... | .... |
| *Port Chester* | 7,440 | 15 | ..... | 4 | 26.7 | 2 | 67 | .... | .... |
| *Ossining* | 7,939 | 14 | ..... | 2 | 14.2 | 2 | 142 | .... | 1 |
| NEW ROCHELLE | 14,720 | 16 | ..... | 5 | 31.5 | 3 | 250 | 1 | .... |
| *Peekskill* | 10,358 | 16 | ..... | 3 | 19.1 | 2 | ..... | .... | .... |
| *White Plains* | 7,900 | 7 | ..... | 0 | ..... | 1 | 142 | .... | .... |
| Rest of district | 85,000 | 112 | 15.0 | 25 | 23.5 | 21 | 50 | .... | .... |
| HUDSON VALLEY DISTRICT Totals | 690,143 | 868 | 15.2 | 180 | 21.0 | 166 | 93 | 4 | 22 |
| ALBANY | 94,151 | 145 | 18.7 | 25 | 17.2 | 22 | 35 | .... | 3 |
| COHOES | 24,000 | 44 | 22.3 | 17 | 38.6 | 4 | 136 | .... | 4 |
| TROY | 75,057 | 139 | ..... | 36 | ..... | 17 | ..... | .... | 2 |
| WATERVLIET | 13,321 | 19 | ..... | 8 | ..... | 1 | ..... | .... | 2 |
| *Green Island* | 4,770 | 12 | ..... | 5 | ..... | 2 | ..... | .... | .... |
| *Hoosick Falls* | 5,671 | 10 | ..... | 4 | ..... | 1 | ..... | .... | .... |
| RENSSELAER | 7,466 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Coxsackie | 4,102 | 2 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| *Catskill* | 5,486 | 14 | ..... | 5 | ..... | 3 | ..... | 2 | 2 |
| HUDSON | 9,528 | 11 | ..... | 1 | ..... | 2 | ..... | .... | .... |
| KINGSTON | 24,535 | 28 | 13.0 | 2 | 7.0 | 6 | 35 | .... | .... |
| *Ellenville* | 3,000 | 7 | ..... | 2 | ..... | 2 | ..... | .... | .... |
| Marbletown | 3,511 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Rosendale | 6,278 | 7 | ..... | 2 | ..... | 1 | ..... | .... | 1 |
| Esopus | 4,907 | 4 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Saugerties* | 3,700 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| POUGHKEEPSIE | 21,029 | 22 | ..... | 2 | ..... | 5 | ..... | .... | 1 |
| Fishkill | 13,016 | 12 | ..... | 4 | ..... | 1 | ..... | .... | .... |
| *Wappingers Falls* | 3,504 | 4 | ..... | 1 | ..... | 2 | ..... | .... | .... |
| NEWBURGH | 25,000 | 28 | 13.5 | 7 | 25.0 | 6 | 180 | 1 | .... |
| *Port Jervis* | 9,385 | 15 | ..... | 1 | ..... | 1 | ..... | .... | .... |
| MIDDLETOWN | 14,522 | 16 | ..... | 3 | 18.5 | 2 | 62 | .... | .... |
| Warwick | 6,403 | 8 | ..... | 1 | ..... | 3 | ..... | .... | .... |
| *Goshen* | 4,564 | 9 | ..... | 3 | ..... | 2 | ..... | .... | .... |

:K STATE DEPARTMENT OF HEALTH

*ricts, cities, villages and towns during June,* 1901

es in *italic* and towns in roman type]

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 74 | 144 | 47 | 16 | 26 | 197 | 371 | 660 | 698 | 60 | 290 | 486 | 504 | 481 | 233 | 420 | 89 | 786 |
| 71 | 142 | 46 | 16 | 20 | 193 | 359 | 631 | 651 | 55 | 258 | 457 | 462 | 435 | 216 | 393 | 79 | 752 |
| 6 | 60 | 21 | 12 | 8 | 105 | 209 | 359 | 329 | 27 | 131 | 226 | 285 | 239 | 133 | 241 | 32 | 422 |
| 65 | 4 | .... | .... | .... | 12 | 9 | 26 | 92 | 1 | 12 | 22 | 22 | 25 | 14 | 19 | 7 | 41 |
| .... | 73 | 24 | 4 | 11 | 69 | 133 | 217 | 197 | 23 | 92 | 187 | 134 | 149 | 62 | 94 | 32 | 246 |
| .... | 4 | .... | .... | 1 | 4 | 4 | 17 | 25 | 4 | 21 | 17 | 13 | 15 | 4 | 24 | 5 | 27 |
| .... | 1 | 1 | .... | .... | 3 | 4 | 12 | 8 | .... | 2 | 5 | 8 | 7 | 3 | 15 | 3 | 16 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | 2 | 1 | 2 | .... | 2 | 1 | 1 |
| .... | .... | .... | .... | .... | 1 | .... | .... | 2 | 1 | 1 | 2 | 1 | 1 | .... | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | 1 | .... | 2 | .... | 2 | .... | 4 | 1 | 2 | 1 | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... | 1 | 1 | 1 | 1 | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 3 | 2 | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 5 | 1 | .... | 4 | .... | .... | 1 | .... | 2 | .... | 5 |
| 3 | .... | .... | .... | .... | 1 | 7 | 5 | 10 | 1 | 7 | 6 | 7 | 6 | 5 | 5 | 1 | 3 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 2 | 2 | .... | 1 | 1 | 1 | 1 |
| .... | .... | 1 | .... | .... | .... | 1 | 2 | 2 | .... | 1 | 1 | 2 | 3 | 1 | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | 2 | 3 | 2 | 1 | .... | 3 | .... | 1 |
| .... | .... | .... | .... | 1 | .... | .... | 1 | 2 | .... | .... | 1 | 4 | 1 | 2 | 1 | .... | .... |
| .... | 1 | .... | .... | 1 | .... | .... | 1 | 1 | .... | .... | 2 | .... | 2 | .... | 2 | 2 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 3 | 2 | 1 | .... | 1 | 3 | 1 | 1 | .... | 3 |
| .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | 2 | .... | .... | 1 | .... |
| .... | .... | .... | .... | 4 | 2 | 2 | 8 | 22 | 1 | 9 | 7 | 14 | 20 | 4 | 5 | 1 | 13 |
| .... | 6 | 10 | 2 | 6 | 9 | 17 | 66 | 120 | 9 | 74 | 66 | 82 | 121 | 43 | 65 | 45 | 97 |
| .... | 1 | .... | .... | .... | .... | 1 | 14 | 24 | 3 | 21 | 14 | 14 | 17 | 9 | 10 | 6 | 8 |
| .... | .... | .... | .... | .... | .... | 2 | 5 | 6 | .... | 1 | 1 | 5 | 7 | .... | 3 | 2 | 8 |
| .... | 1 | 8 | 1 | 2 | 1 | 4 | 10 | 23 | 1 | 8 | 11 | 10 | 12 | 11 | 12 | 7 | 15 |
| .... | .... | .... | .... | 2 | .... | 1 | 2 | 3 | .... | 2 | .... | 1 | 5 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | 1 | .... | 2 | .... | 2 | 1 | 2 | .... | .... | 2 | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 3 | .... | .... | .... | .... | 2 | .... | .... | .... | 4 |
| .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 2 | .... | .... | 1 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... |
| .... | 2 | .... | .... | .... | .... | .... | 3 | .... | .... | .... | .... | 2 | 1 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | .... | 1 | 1 | 1 | 2 | .... | 2 | 1 | .... |
| .... | .... | .... | .... | .... | 1 | .... | 2 | 1 | 1 | 3 | 4 | 2 | 4 | 1 | 3 | .... | 6 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 3 | .... | 2 | .... | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | .... | .... | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | .... | .... | 1 | .... | .... |
| .... | .... | 1 | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 2 | 4 | .... | 2 | 1 | 4 | 2 | .... | 1 | 3 | 2 |
| .... | .... | .... | .... | .... | .... | 1 | 1 | 3 | 1 | .... | .... | .... | 2 | .... | 3 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | 1 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | 2 | 2 | 1 | 1 | 1 | 1 | 7 | 1 | 4 | 2 | 2 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | .... | 2 | 1 | 3 | 2 | .... | 4 | .... | .... |
| .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... | 2 | 5 | .... | .... | 2 | 1 | .... | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | 2 | .... | .... | 1 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 4 | .... | 1 | 2 | .... | .... | .... | 1 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| HUDSON VALLEY DIST.—(*Con.*) | | | | | | | | | |
| Montgomery | 5,939 | 7 | ..... | 2 | ..... | 0 | ..... | .... | .... |
| Haverstraw | 9,874 | 11 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Nyack* | 4,275 | 7 | ..... | 2 | ..... | 2 | ..... | .... | .... |
| Ramapo | 7,502 | 5 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Rest of district | 271,800 | 268 | 12.0 | 46 | 17.0 | 75 | 82 | 1 | 7 |
| ADIRONDACK AND NORTH'N DISTRICT Totals | 394,772 | 402 | 12.2 | 74 | 14.0 | 102 | 77 | 2 | 5 |
| WATERTOWN | 21,700 | 27 | 15.0 | 4 | 14.8 | 5 | ..... | .... | .... |
| Ellisburgh | 3,888 | 12 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Cape Vincent | 2,882 | 6 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Clayton | 4,313 | 3 | ..... | 1 | 33.3 | 0 | 333 | .... | .... |
| OGDENSBURGH | 12,633 | 10 | ..... | 1 | 9.0 | 0 | ..... | .... | .... |
| Gouverneur | 6,000 | 5 | ..... | 1 | 20.0 | 0 | 200 | 1 | .... |
| *Potsdam* | 3,843 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Canton | 6,387 | 6 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Malone* | 5,935 | 1 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| *Plattsburgh* | 8,434 | 10 | ..... | 3 | 30.0 | 1 | 300 | .... | 1 |
| *Glens Falls* | 12,613 | 18 | ..... | 3 | 16.7 | 3 | ..... | .... | .... |
| *Whitehall* | 4,377 | 4 | ..... | 3 | 75.0 | 0 | ..... | .... | .... |
| Fort Edward | 5,216 | 12 | ..... | 4 | 33.3 | 1 | 250 | 1 | .... |
| *Sandy Hill* | 4,473 | 7 | ..... | 4 | 57.0 | 0 | 428 | .... | .... |
| Granville | 5,217 | 11 | ..... | 1 | 9.0 | 3 | 90 | .... | 1 |
| Greenwich | 4,172 | 10 | ..... | 0 | ..... | 5 | 100 | .... | 1 |
| Lowville | 3,746 | 4 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Rest of district | 278,943 | 255 | 11.0 | 48 | 20.0 | 75 | 67 | .... | 1 |
| MOHAWK VALLEY DISTRICT Totals | 408,973 | 447 | 13.5 | 76 | 16 0 | 135 | 60 | 4 | 2 |
| SCHENECTADY | 31,682 | 39 | 15.0 | 8 | 20.8 | 10 | 104 | .... | .... |
| Cobleskill | 3,973 | 7 | ..... | 0 | ..... | 2 | 142 | .... | 1 |
| AMSTERDAM | 20,929 | 17 | 10.0 | 8 | 47.0 | 2 | 117 | .... | .... |
| *Fort Plain* | 2,444 | 3 | ..... | 2 | 66.6 | 0 | ..... | .... | .... |
| JOHNSTOWN | 10,130 | 16 | ..... | 6 | 37.5 | 3 | ..... | .... | .... |
| GLOVERSVILLE | 18,349 | 17 | ..... | 3 | 17.7 | 4 | 177 | 1 | .... |
| LITTLE FALLS | 10,381 | 15 | ..... | 3 | 20.0 | 6 | 65 | .... | .... |
| *Herkimer* | 5,555 | 9 | ..... | 1 | 11.1 | 3 | 222 | .... | .... |
| *Ilion* | 5,138 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| UTICA | 56,383 | 88 | 19.0 | 16 | 18.2 | 18 | 11 | .... | .... |
| Whitestown | 6,235 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| ROME | 15,343 | 23 | ..... | 3 | 13.0 | 4 | ..... | .... | .... |
| Boonville | 3,332 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Camden | 3,745 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Waterford | 6,157 | 6 | ..... | 2 | 33.3 | 0 | 166 | .... | .... |
| *Mechanicville* | 4,695 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Ballston Spa* | 3,923 | 4 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| *Saratoga Springs* | 12,409 | 26 | ..... | 3 | 11.5 | 7 | 275 | 1 | 1 |
| Rest of district | 188,170 | 169 | 10.5 | 21 | 12.5 | 69 | 62 | 2 | .... |
| SOUTHERN TIER DISTRICT Totals | 429,434 | 434 | 12.2 | 87 | 20.0 | 105 | 72 | 1 | 1 |
| BINGHAMTON | 39,647 | 80 | 24.0 | 20 | 25.0 | 9 | 375 | .... | .... |
| *Owego* | 5,039 | 5 | ..... | 1 | 20.0 | 1 | 200 | .... | .... |
| Candor | 3,330 | 6 | ..... | 1 | 16.7 | 3 | 500 | .... | .... |
| *Waverly* | 4,465 | 6 | ..... | 2 | 33.3 | 1 | ..... | .... | .... |
| ELMIRA | 35,672 | 28 | 10.0 | 3 | 10.6 | 2 | 36 | 1 | .... |

FOR JUNE—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | 1 | 1 | | 1 | | | 2 | | | | 2 |
| 1 | | | | | | 1 | | | 2 | 1 | 1 | | | 1 | 1 | 1 | | 1 |
| | | | | | | | 1 | | 1 | | | 1 | | | 1 | | 1 | 2 |
| | | | | | | | | | 1 | | | | | 1 | 1 | 2 | | |
| 2 | | 2 | 1 | 1 | 2 | 2 | 4 | 22 | 30 | 1 | 15 | 17 | 32 | 46 | 14 | 16 | 19 | 34 |
| 1 | | | 5 | 1 | 5 | 7 | 4 | 43 | 39 | 7 | 27 | 21 | 48 | 56 | 23 | 33 | 29 | 46 |
| | | | | | | | | 2 | 3 | 2 | 3 | | 1 | 3 | 1 | 3 | 4 | 5 |
| | | | | | | | | 5 | 1 | | 1 | 1 | 1 | | 1 | | 1 | 1 |
| | | | | | | | | 1 | | | 2 | 1 | 1 | | | | 1 | |
| | | | 1 | | | | | | 1 | | | | | | | 1 | | |
| | | | | | | | | | 1 | | | 1 | 2 | 3 | | 3 | | |
| | | | | | | | | | 1 | 1 | 1 | | | 1 | | | | |
| | | | | | | | | | | | | | | | | 1 | | |
| | | | | | | | | | | | | | 3 | 1 | 1 | | | 1 |
| | | | | | | | | | | | | | | | | | | 1 |
| | | | 1 | | | 1 | | 1 | | | 1 | | 2 | 1 | 1 | | | 1 |
| | | | | | | | | | | | 3 | 2 | 2 | 4 | 1 | 3 | | 3 |
| | | | | | | | | 1 | | | | | | | | 1 | | 2 |
| 1 | | | | | | 1 | | 2 | | | | | 2 | 1 | | 3 | | 1 |
| | | | 1 | | | | 2 | | | | 1 | | | 2 | | 1 | | |
| | | | | | | | | | 1 | | | 1 | 1 | | 3 | 3 | | 1 |
| | | | | | | | | 3 | | | | | 2 | 1 | | 2 | 1 | |
| | | | | | | | | | 1 | | | | | | | 1 | | 2 |
| | | | 2 | 1 | 5 | 5 | 2 | 28 | 30 | 4 | 15 | 15 | 31 | 39 | 15 | 11 | 22 | 28 |
| | | 1 | 4 | | 3 | 8 | 7 | 35 | 39 | 2 | 38 | 34 | 53 | 77 | 14 | 34 | 41 | 51 |
| | | | | | | 2 | 2 | 2 | 2 | 1 | 6 | 1 | 4 | 9 | 1 | 6 | 1 | 2 |
| | | | | | | | | | | | | | | 1 | | 4 | 1 | |
| | | | 1 | | | | 1 | 4 | | | | | 1 | 4 | | 2 | 1 | 3 |
| | | | | | | | | | | | | | | 2 | | | | 1 |
| | | | | | | | | 1 | 1 | | 2 | 1 | 1 | 5 | 3 | | 2 | |
| | | | 1 | | 1 | | | 2 | | | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 3 |
| | | | | | | 1 | | | 1 | 1 | 1 | 1 | 1 | 5 | | | 2 | 2 |
| | | | | | | 2 | | 2 | | | 1 | | 1 | 2 | | 1 | | |
| | | | | | | | | | 1 | | | | 1 | | | | | |
| | | | | | | 1 | | 8 | 16 | | 12 | 8 | 9 | 12 | 2 | 5 | 4 | 11 |
| | | | | | | | | | 1 | | | | 2 | 1 | 1 | | | |
| | | | | | | | | 1 | 1 | | 4 | 1 | 3 | 5 | | 1 | 1 | 6 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | 1 | |
| | | | | | | | 1 | 1 | 1 | | 1 | | | | | 1 | | 1 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | 1 | 1 | | | 2 | |
| | | 1 | 1 | | | | | 1 | 1 | | 1 | 6 | | 9 | 1 | 2 | 1 | |
| | | | 1 | | 2 | 2 | 3 | 13 | 14 | | 8 | 15 | 28 | 19 | 5 | 11 | 24 | 22 |
| 1 | | 2 | 9 | 2 | 5 | 2 | 8 | 28 | 33 | 5 | 46 | 26 | 52 | 41 | 18 | 40 | 46 | 68 |
| | | 1 | 1 | | | 1 | | 6 | 6 | 1 | 8 | 4 | 5 | 9 | 7 | 6 | 6 | 19 |
| | | | 1 | | | | | | | | | | 2 | | | 2 | | |
| | | | 1 | 1 | | 1 | | | | | | 1 | | | | | 1 | 1 |
| | | | | | | | | | | | 2 | | | | 1 | | 1 | 2 |
| | | | | | | | | 1 | 4 | | 4 | 2 | 5 | 4 | 1 | 4 | | 2 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 6 | ..... | 2 | 33.3 | 2 | 167 | .... | .... |
| HORNELLSVILLE | 12,000 | 20 | ..... | 9 | 45.0 | 4 | 250 | .... | .... |
| *Bath* | 5,000 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| CORNING | 11,061 | 14 | ..... | 2 | 14.2 | 2 | 70 | .... | 1 |
| Wellsville | 5,000 | 7 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| OLEAN | 9,462 | 14 | ..... | 1 | 7.0 | 3 | ..... | .... | .... |
| *Salamanca* | 4,251 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| DUNKIRK | 11,616 | 10 | ..... | 4 | 40.0 | 1 | ..... | .... | .... |
| JAMESTOWN | 22,892 | 22 | 12.0 | 5 | 22.5 | 7 | 136 | .... | .... |
| *Westfield* | 2,430 | 6 | ..... | 1 | 16.7 | 1 | 167 | .... | .... |
| *Fredonia* | 4,125 | 4 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Rest of district | 248,500 | 200 | 8.0 | 35 | 17.5 | 67 | 60 | .... | .... |
| EAST CENTRAL DISTRICT Totals | 401,082 | 422 | 12.6 | 49 | 11.8 | 135 | 83 | 2 | 3 |
| SYRACUSE | 108.374 | 119 | 13.5 | 19 | 16.0 | 22 | 100 | .... | 2 |
| *Baldwinsville* | 3,000 | 3 | ..... | 0 | ..... | 1 | 333 | .... | .... |
| De Witt | 5,435 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| CORTLAND | 9,014 | 7 | ..... | 3 | 42.8 | 2 | 142 | .... | .... |
| *Homer* | 2,381 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Oneida* | 7,942 | 8 | ..... | 1 | 12.5 | 3 | ..... | .... | .... |
| Hamilton | 3,744 | 5 | ..... | 2 | 40.0 | 1 | ..... | .... | .... |
| Cazenovia | 3,830 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Brookfield | 2,726 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Norwich* | 5,766 | 9 | ..... | 3 | 33.3 | 1 | 333 | .... | .... |
| *Oneonta* | 7,147 | 16 | ..... | 1 | 6.2 | 5 | 62 | .... | .... |
| Worcester | 2,409 | 6 | ..... | 1 | 16.7 | 0 | 333 | .... | .... |
| *Cooperstown* | 2,368 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Walton | 4,869 | 3 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Delhi | 3,243 | 3 | ..... | 0 | ..... | 1 | 333 | .... | 1 |
| Liberty | 4,568 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Rest of district | 225,844 | 232 | 12.3 | 19 | 6.5 | 93 | 40 | 2 | .... |
| WEST CENTRAL DISTRICT Totals | 405,946 | 351 | 10.2 | 41 | 12.6 | 115 | 55 | .... | 2 |
| AUBURN | 30,345 | 31 | 12.5 | 7 | 22.6 | 8 | 68 | .... | 1 |
| ITHACA | 13,136 | 13 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Hector | 4,137 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| *Waterloo* | 4,256 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 9 | ..... | 1 | 11.1 | 6 | ..... | .... | .... |
| GENEVA | 10,433 | 10 | ..... | 1 | 10.0 | 3 | 100 | .... | .... |
| *Canandaigua* | 6,151 | 10 | ..... | 0 | ..... | 6 | 100 | .... | .... |
| Manchester | 4,733 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| Phelps | 4,788 | 7 | ..... | 2 | 28.5 | 3 | ..... | .... | .... |
| *Penn Yan* | 4,650 | 7 | ..... | 0 | ..... | 1 | 142 | .... | .... |
| *Batavia* | 9,180 | 11 | ..... | 2 | 18.2 | 3 | ..... | .... | .... |
| *Dansville* | 3,633 | 6 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Le Roy* | 3,144 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| Warsaw | 4,341 | 6 | ..... | 1 | 16.7 | 1 | ..... | .... | .... |
| Rest of district | 206,500 | 225 | 12.0 | 24 | 12.0 | 73 | 66 | .... | 1 |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 879,022 | 916 | 13.0 | 196 | 21.5 | 193 | 98 | 2 | 17 |
| BUFFALO | 352,387 | 375 | 13.0 | 103 | 27.5 | 41 | 147 | 2 | 5 |
| *Tonawanda* | 7,421 | 10 | ..... | 4 | 40.0 | 2 | ..... | .... | .... |
| *Amherst* | 4,223 | 2 | ..... | 1 | 50.0 | | | .... | .... |

OR JUNE—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| | | | | | | | 1 | 1 | | | | | 1 | 1 | | 1 | | 1 |
| | | | 5 | | | | | 1 | 1 | | 1 | | | 1 | 1 | 1 | 2 | 7 |
| | | | | | | | | | | | | | | | 1 | 1 | | |
| | | | | | | | | | 4 | 1 | 2 | | 2 | 2 | 1 | 1 | | |
| | | | | | | | | 1 | | | | 1 | | 1 | 1 | 2 | | 1 |
| | | | | | | | | 1 | | | 2 | | 1 | 1 | | 3 | 3 | 3 |
| | | | | | | | | 1 | | | 1 | | | | | 1 | 1 | |
| | | | | | | | | | | 2 | 1 | | 1 | 1 | | 2 | | 3 |
| | | | | | 2 | | 1 | 1 | 2 | | 2 | 2 | 3 | 2 | 1 | 1 | 2 | 3 |
| | | | | | 1 | | | | 1 | | 1 | 1 | 2 | | | | | |
| | | | | | | | | | 1 | | | | 1 | | 1 | | | 1 |
| 1 | | 1 | 1 | 1 | 2 | | 6 | 15 | 14 | 1 | 22 | 15 | 29 | 19 | 3 | 15 | 30 | 25 |
| | | 3 | 10 | 1 | 1 | 7 | 6 | 29 | 44 | 3 | 33 | 35 | 71 | 42 | 23 | 25 | 38 | 46 |
| | | | | | | 6 | 3 | 12 | 14 | 2 | 5 | 9 | 15 | 12 | 8 | 8 | 8 | 15 |
| | | | | 1 | | | | 1 | | | | | 1 | | | | | |
| | | | | | | | | | 1 | | | | | | | | 1 | |
| | | | 1 | | | | | | | | 1 | [illegible] | 1 | | | | 1 | 3 |
| | | | | | | | | | | | | | | 1 | | | | |
| | | | | | | | | | 1 | | 1 | 4 | | 1 | | | 1 | |
| | | | | | | | | | | | | 1 | 1 | | | | | 3 |
| | | | | | | | | | | | | | 2 | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | 2 | | | | | 1 | | | | 1 | 1 | 1 | 13 | 1 | 1 | | |
| | | | 1 | | | | | | 2 | | 1 | 5 | 1 | 1 | | | 3 | |
| | | | 2 | | | | | | 2 | | 1 | | | | | | | |
| | | | | | | | | 1 | | | | | | | | | | |
| | | | | | | | | | | | 1 | | | | | | 2 | |
| | | | | | | | | 1 | | | | | 1 | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | 3 | | | 1 | | | | | | 1 |
| | | 1 | 6 | | 1 | 1 | 2 | 14 | 21 | 1 | 22 | 13 | 48 | 23 | 14 | 16 | 22 | 25 |
| | | 1 | 3 | 3 | 5 | 1 | 3 | 26 | 36 | 3 | 27 | 24 | 58 | 48 | 19 | 25 | 26 | 41 |
| | | | | | 1 | | | 2 | 5 | | 3 | 4 | 3 | 6 | | 1 | | 5 |
| | | | | | | | | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | | |
| | | | | | | | | | | | 1 | | | 1 | 1 | | | |
| | | | | | | | | 1 | 1 | | 1 | 1 | | | | | 1 | |
| | | | | | | | | | 2 | | 1 | | 2 | 3 | 1 | | | |
| | | | | 1 | | | | 1 | | | | 1 | 3 | 1 | 1 | 1 | | 1 |
| | | | | 1 | | | | 1 | | | 1 | 1 | | 1 | 2 | 1 | 1 | 1 |
| | | | | | | | | 1 | 1 | | | 1 | | | | | | 1 |
| | | | | | | | | 1 | | | 1 | 1 | 1 | | | | 1 | 2 |
| | | 1 | | | | | | | 2 | | 1 | | | 1 | | | | 2 |
| | | | | | | | | | | | | 1 | 1 | 2 | | 2 | 2 | 3 |
| | | | | | | | | | 3 | | | | 3 | | | | | |
| | | | | | | | | | | | | | 1 | 1 | 1 | | | 1 |
| | | | | | | | | | 1 | | | | 2 | | | 1 | 1 | 1 |
| | | | 3 | 1 | 4 | 1 | 3 | 18 | 20 | 2 | 17 | 12 | 40 | 30 | 11 | 18 | 20 | 24 |
| 1 | | 8 | 7 | 2 | 3 | 15 | 34 | 78 | 102 | 8 | 61 | 51 | 89 | 115 | 45 | 81 | 65 | 124 |
| | | 6 | 6 | 1 | 2 | 9 | 24 | 33 | 37 | 5 | 22 | 21 | 29 | 46 | 23 | 42 | 10 | 52 |
| | | | | | | | | | | | | | 1 | 3 | | 1 | 1 | 4 |
| | | | | | | | | | 1 | | | | | | | | | |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*) | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 8 | ..... | 3 | 37.5 | 1 | 125 | .... | .... |
| LOCKPORT | 16,581 | 24 | ..... | 4 | 16.6 | 9 | 83 | .... | 1 |
| NIAGARA FALLS | 19,457 | 25 | 15.5 | 4 | 16.0 | 1 | 240 | .... | 5 |
| *Medina* | 4,716 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| *Albion* | 4,477 | 5 | ..... | 3 | 60.0 | 0 | 200 | .... | .... |
| *Brockport* | 3,400 | 6 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| ROCHESTER | 162,608 | 159 | ..... | 27 | ..... | 37 | ..... | .... | 1 |
| Palmyra | 3,758 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Newark* | 4,578 | 9 | ..... | 1 | 11.0 | 0 | 222 | .... | .... |
| Lyons | 5,824 | 12 | ..... | 0 | ..... | 6 | 83 | .... | 1 |
| *Clyde* | 2,507 | 4 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| OSWEGO | 22,200 | 21 | 11.5 | 4 | 19.0 | 6 | 50 | .... | .... |
| *Fulton* | 5,281 | 8 | ..... | 3 | ..... | 0 | ..... | .... | .... |
| Richland | 3,535 | 5 | ..... | 1 | 20.0 | 3 | ..... | .... | .... |
| Rest of district | 247,000 | 239 | 11.5 | 37 | 16.0 | 83 | 60 | .... | 3 |
| Totals for the state | 7,268,000 | 9,500 | 16.0 | 2,500 | 26.3 | 1,476 | 133 | 42 | 83 |
| Average for past 5 years | ..... | 9,035 | 16.3 | 3,021 | 33.4 | ..... | 155 | 61 | 73 |

REMARKS—The weather during the three months, April-June, showed a uniform mean atmospheric pressure at all points, with little variation for the whole period from 29.95. The humidity of the air was highest in the central part of the state and highest in May, the average dew point of three localities being in April, 37 degrees, in May, 47 degrees, and in June, 57 degrees, the degree of saturation for these months being respectively 73 per cent, 75 per cent and 70 per cent. The temperature of May was subnormal on an average to less than one degree, but in April it was excessive, and in June markedly so, the average of the records of April showing 47 degrees, or 2 degrees above normal, and that of June 68 degrees, or 3 degrees above the normal, due to a hot spell in the last five days of the month, with an average temperature for the state of 80 degrees. During the last two days of June there were reported 22 deaths from the effects of heat in the rural parts of the state, also 1 from lightning stroke. This hot weather has continued into July. The motion of the wind was less than during the three winter months (as 22 to 30) and its direction northerly in April, variable in May and southwesterly in June. The rain fall was excessive throughout the period, with an average of 2½ inches above the normal, although moderately deficient in the west during May and June.

Smallpox during the month developed at Freeport, Long Island; Tuckahoe and Dobbs Ferry, Westchester county; Charlton and Victory Mills, Saratoga county; Whitehall, Washington county; Sharon Springs, Rochester, York, Livingston county; Catharine, Schuyler county; Dunkirk, Gowanda and vicinity, Cattaraugus county, in all 25 cases in ten of these localities, and in Victory Mills and Gowanda, each probably six or eight cases. It has continued in Yonkers, where there were 22 cases and 3 deaths in June; the town of Ramapo, 8 cases; Goshen and places whither it has spread from there, 11 in all; and at Cohoes, not yet reported free—probably there have been 100 cases in the state during the month outside of New York city. About 350 cases have been reported during June in the city of New York, with 71 deaths. The 74 deaths for the state is the largest number from smallpox of any month on our records.

Health officers have often, very properly, found it necessary to maintain a quarantine of observation, more or less rigid, according to the circumstances, of persons who have been exposed to smallpox. The caution is offered as to releasing exposed persons from all observation after vaccinating them; that its protective value depends, in a measure, on the readiness of its taking effect. Commonly, there is a period of incubation after vaccination of about three days, the characteristic lesion of the point of insertion

FOR JUNE—(*Concluded*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of uninary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| ---- | ---- | 1 | ---- | --- | ---- | ---- | 1 | 1 | 1 | ---- | ------ | ---- | ------ | ------ | 1 | 1 | 1 | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | 2 | 5 | ---- | 2 | 2 | 4 | 2 | ---- | 1 | 3 | 1 |
| ---- | ---- | ---- | --- | -- | ---- | 1 | --- | 2 | 3 | 2 | 3 | 2 | 1 | ------ | ---- | 4 | --- | 2 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ------ | ------ | --- | 1 | ---- | ------ | 1 | ---- | 1 | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | 1 | ---- | --- | ------ | 1 | --- | 2 | ---- | ------ | 1 | ---- | ---- | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | 1 | ---- | 1 | 1 | ------ | ------ | 1 | ---- | 1 | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 2 | 15 | 24 | --- | 15 | 14 | 11 | 25 | 9 | 10 | 14 | 18 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | --- | ------ | ------ | ---- | ------ | ---- | ------ | ------ | --- | 1 | ---- | ---- |
| ---- | ---- | 1 | ---- | ---- | ---- | 1 | ---- | ------ | 2 | ---- | ------ | ---- | 1 | ------ | -- | 3 | --- | 1 |
| ---- | ---- | ---- | --- | ---- | ---- | ---- | ---- | 1 | 1 | ---- | ------ | ---- | 3 | 1 | 1 | 1 | 2 | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ------ | 1 | ---- | ------ | 1 | 1 | ------ | ---- | 1 | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ------ | 5 | ---- | 2 | 1 | 3 | 2 | --- | 1 | 3 | 3 |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | 2 | ------ | --- | ------ | ---- | ------ | ------ | 1 | ---- | ---- | 4 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ------ | --- | ------ | ---- | 2 | 1 | ---- | ---- | 1 | --- |
| 1 | ---- | -- | 1 | 1 | --- | 2 | 6 | 20 | 20 | 1 | 13 | 17 | 33 | 33 | 9 | 14 | 29 | 36 |
| 27 | 74 | 165 | 95 | 27 | 54 | 246 | 450 | 965 | 1,111 | 97 | 596 | 751 | 157 | 981 | 418 | 723 | 379 | 1,259 |
| 29 | 3 | 72 | 128 | 26 | 86 | 292 | 620 | 877 | 1,023 | 77 | 778 | 645 | 778 | 1,006 | 332 | 588 | 375 | 1,165 |

beginning then to appear. As the incubation period of smallpox is generally about fourteen days there is time for the vaccinia to work so as to prevent its development. But sometimes the evolution of the vaccinia is delayed, it may be so long as not to prevent the smallpox. A trained nurse recently took charge of a case of smallpox, having been vaccinated the same day. Ten days later the arm began to be sore, and a couple of days later the initial fever of smallpox developed and she had mild varioloid, the vaccine sore proceeding normally with it and possibly modifying but not preventing the graver disease. It is probable that if the vaccine sore reaches the eighth day smallpox will not occur, but it appears unsafe to trust a vaccination in which the arm lesion has failed to commence within five or six days after exposure to smallpox. Several cases of this sort have, like the one cited, caused the occurrence of this disease in fresh localities. It is therefore well if the evolution of vaccinia is delayed beyond four days to keep the exposed person under observation until the incubation period of smallpox is passed.

The tuberculosis investigation records do not contain on the collective investigation blanks an inquiry as whether a bacteriological test of the sputum has been made. This diagnostic evidence is desirable, but since it has not been readily available to many it is preferred to trust the clinical data which are to a large degree sufficient rather than possibly lose a complete census. Measures are in operation whereby, outside the larger cities, sputum tests can be made at the bacteriological laboratory of the State Department of Health on application through the local health officer. The questions asked on the blank will furnish much desirable information, and additional data, not covered by them, may be supplied by the reporters. For certain large institutions a blank form is supplied on which a considerable number of cases may be reported in a more condensed way.

June, next to November, is the month of least mortality in this state. There were 9500 deaths this month, 800 less than in May, the decrease being in respiratory diseases and those of the circulatory and nervous systems. There were 630 deaths from pneumonia against 980 in May. A few deaths were reported from the effects of grippe. There were 224 deaths from Bright's disease, including all forms, outside of New York city and Albany, with less than 50 deaths from other diseases of the urinary system. Deaths from accident are as usual increased; in 325 deaths, 85 were from drowning and 22 from heat stroke. Diarrheal diseases caused but a moderate increase in mortality.

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS.

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| MARITIME DISTRICT | | | | | | | | | |
| Totals | 3,852,922 | 8,130 | 24.8 | 3,395 | 41.2 | 740 | 284 | 27 | 5 |
| CITY OF NEW YORK | | | | | | | | | |
| Totals | 3,536,517 | 7,699 | 25.6 | 3,283 | 42.7 | 658 | 290 | 26 | 53 |
| BOROUGH OF MANHATTAN | 1,873,562 | 4,068 | 25.5 | 1,625 | 40.0 | 326 | 238 | 19 | 30 |
| BOROUGH OF THE BRONX | 222,124 | 493 | 26.7 | 187 | 38.0 | 35 | 400 | 3 | 1 |
| BOROUGH OF BROOKLYN | 1,209,064 | 2,628 | 25.4 | 1,247 | 47.5 | 220 | 355 | 4 | 19 |
| BOROUGH OF QUEENS | 162,834 | 342 | 24.6 | 152 | 44.5 | 32 | 370 | ... | 3 |
| BOROUGH OF RICHMOND | 68,933 | 168 | 28.6 | 72 | 43.0 | 15 | 324 | ... | ... |
| Oyster Bay | 16,334 | 7 | ... | 4 | 57.0 | 1 | 428 | ... | ... |
| Hempstead | 27,066 | 25 | ... | 2 | 8.0 | 6 | 160 | ... | 1 |
| North Hempstead | 12,048 | 16 | ... | 2 | 12.5 | 3 | 62 | ... | ... |
| Southold | 8,301 | 11 | ... | 4 | 36.4 | 4 | 90 | ... | ... |
| *Sag Harbor* | 2,000 | 3 | ... | 1 | 33.3 | 0 | ... | ... | ... |
| Huntington | 9,483 | 10 | ... | 2 | 20.0 | 4 | ... | ... | ... |
| Brookhaven | 14,592 | 19 | ... | 1 | 5.0 | 3 | ... | ... | ... |
| YONKERS | 47,931 | 79 | 19.3 | 25 | 38.0 | 6 | 220 | ... | ... |
| Greenburgh | 15,564 | 17 | ... | 3 | 18.2 | 2 | ... | ... | ... |
| MOUNT VERNON | 20,346 | 23 | ... | 11 | 48.5 | 3 | 300 | 1 | 1 |
| *Port Chester* | 7,440 | 11 | ... | 7 | 63.5 | 0 | 635 | ... | ... |
| *Ossining* | 7,939 | 10 | ... | 2 | 20.0 | 5 | 100 | ... | ... |
| NEW ROCHELLE | 14,720 | 27 | ... | 16 | 60.0 | 1 | 360 | ... | 1 |
| *Peekskill* | 10,358 | 19 | ... | 4 | 21.0 | 2 | 156 | ... | ... |
| *White Plains* | 7,900 | 12 | ... | 3 | 25.0 | 2 | 166 | ... | ... |
| Rest of district | 85,000 | 142 | 20.0 | 28 | 50.0 | 40 | 115 | ... | 3 |
| HUDSON VALLEY DISTRICT | | | | | | | | | |
| Totals | 690,143 | 1,035 | 18.0 | 243 | 23.7 | 221 | 125 | 5 | 11 |
| ALBANY | 94,151 | 142 | 20.7 | 30 | 21.1 | 27 | 85 | ... | ... |
| COHOES | 24,000 | 29 | 14.2 | 14 | 48.5 | 1 | 310 | ... | ... |
| TROY | 75,057 | 152 | 23.5 | 54 | 35.5 | 14 | 240 | ... | 3 |
| WATERVLIET | 14,321 | 25 | ... | 13 | 26.0 | 2 | 160 | ... | ... |
| *Green Island* | 4,770 | 10 | ... | 2 | 20.0 | 1 | 100 | ... | ... |
| *Hoosick Falls* | 5,671 | 5 | ... | 2 | 40.0 | 0 | ... | ... | ... |
| RENSSELAER | 7,466 | 5 | ... | 1 | 20.0 | 0 | ... | ... | ... |
| Coxsackie | 4,102 | 7 | ... | 2 | 28.5 | 0 | 428 | ... | 1 |
| *Catskill* | 5,486 | 11 | ... | 3 | 27.3 | 3 | 90 | ... | ... |
| HUDSON | 9,528 | 14 | ... | 3 | 21.4 | 2 | 75 | ... | ... |
| KINGSTON | 24,535 | 44 | ... | 10 | 22.0 | 5 | 110 | ... | ... |
| *Ellenville* | 3,000 | 4 | ... | 0 | ... | 2 | ... | ... | ... |
| Marbletown | 3,511 | 6 | ... | 1 | 16.7 | 0 | 167 | 1 | ... |
| Rosendale | 6,278 | 11 | ... | 4 | 36.3 | 1 | 180 | ... | ... |
| Esopus | 4,907 | 2 | ... | 0 | ... | 0 | ... | ... | ... |
| *Saugerties* | 8,700 | 6 | ... | 1 | 16.7 | 2 | ... | ... | ... |
| POUGHKEEPSIE | 24,029 | 41 | ... | 9 | 22.0 | 10 | 120 | ... | 1 |
| Fishkill | 13,016 | 23 | ... | 4 | 16.8 | 5 | 45 | ... | ... |
| *Wappingers Falls* | 3,504 | 3 | ... | 1 | 33.3 | 0 | ... | ... | ... |
| NEWBURGH | 25,000 | 35 | ... | 12 | 33.5 | 6 | 230 | 1 | ... |
| *Port Jervis* | 9,385 | 18 | ... | 2 | 11.1 | 4 | 117 | ... | 1 |
| MIDDLETOWN | 14,522 | 14 | ... | 4 | 28.5 | 4 | 385 | ... | 1 |
| Warwick | 6,403 | 7 | ... | 1 | 12.8 | 4 | 128 | ... | 1 |
| Goshen | 4,564 | 8 | ... | 0 | ... | 6 | ... | ... | ... |

YORK STATE DEPARTMENT OF HEALTH

*districts, cities, villages and towns during July*, 1901

villages in *italic* and towns in roman type]

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 18 | 87 | 93 | 57 | 7 | 28 | 103 | 1831 | 449 | 679 | 44 | 245 | 485 | 403 | 582 | 242 | 1609 | 125 | 957 |
| 16 | 80 | 93 | 57 | 6 | 24 | 102 | 1781 | 425 | 639 | 43 | 221 | 449 | 365 | 517 | 220 | 1550 | 111 | 921 |
| 3 | 8 | 41 | 36 | 4 | 11 | 64 | 754 | 255 | 311 | 24 | 125 | 241 | 205 | 279 | 134 | 975 | 59 | 490 |
| 2 | 72 | 2 | .... | 1 | 2 | 6 | 68 | 8 | 99 | 2 | 13 | 19 | 12 | 25 | 13 | 81 | 5 | 59 |
| 6 | .... | 45 | 21 | 1 | 8 | 25 | 802 | 147 | 190 | 13 | 62 | 159 | 120 | 169 | 60 | 413 | 37 | 327 |
| 3 | .... | 4 | .... | .... | 1 | 5 | 109 | 7 | 24 | 3 | 11 | 19 | 18 | 32 | 7 | 60 | 6 | 30 |
| 2 | .... | 1 | .... | .... | 2 | 2 | 48 | 8 | 15 | 1 | 10 | 11 | 10 | 12 | 6 | 21 | 4 | 15 |
| .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | .... | .... | .... | .... | 1 | .... | 3 | .... | .... |
| 1 | 1 | .... | .... | .... | .... | .... | 1 | 3 | 3 | .... | 1 | 3 | 2 | 4 | 3 | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | 1 | 2 | .... | 2 | 1 | 6 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 1 | 2 | 1 | 1 | .... | .... | .... | 2 | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | 2 | .... | 3 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 4 | .... | 3 | 2 | .... | 4 | 1 | 3 | 1 | .... |
| .... | 5 | .... | .... | .... | .... | .... | 12 | 6 | 8 | .... | 1 | 6 | 6 | 6 | 4 | 16 | .... | 9 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | 4 | 5 | 2 | 3 | .... | .... |
| .... | .... | .... | .... | .... | 1 | .... | 4 | .... | 1 | .... | 2 | 1 | 1 | 2 | 3 | 3 | .... | 4 |
| .... | .... | .... | .... | .... | .... | .... | 7 | .... | .... | .... | 1 | 1 | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | .... | 3 | 1 | 1 | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 9 | 1 | 2 | .... | 2 | 2 | 1 | 3 | 1 | 2 | .... | 3 |
| .... | .... | .... | .... | .... | 1 | .... | 2 | .... | 1 | .... | 2 | 2 | 2 | 5 | 1 | 2 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | .... | 1 | .... | .... | 2 | .... | 2 | 2 | 1 |
| 1 | 1 | .... | .... | 1 | 2 | 1 | 7 | 8 | 17 | .... | 6 | 13 | 17 | 27 | 5 | 15 | 5 | 13 |
| 1 | .... | 2 | 1 | 1 | 7 | 7 | 93 | 32 | 112 | 11 | 87 | 85 | 102 | 162 | 36 | 123 | 60 | 97 |
| .... | .... | .... | .... | .... | .... | 1 | 11 | 6 | 17 | .... | 15 | 15 | 15 | 26 | 5 | 14 | 5 | 12 |
| .... | .... | .... | .... | .... | .... | .... | 9 | 3 | 4 | .... | .... | .... | 2 | 3 | 1 | 3 | 1 | 3 |
| .... | .... | .... | .... | .... | 2 | 2 | 29 | 2 | 19 | 1 | 16 | 11 | 10 | 15 | 4 | 16 | 4 | 18 |
| .... | .... | .... | .... | .... | 1 | .... | 3 | 1 | .... | .... | 2 | 4 | .... | 4 | 1 | 2 | .... | 7 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 2 | 3 | 1 | 2 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | 2 | .... | 1 | .... | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | 1 | .... | .... | 2 | 1 | 2 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | 2 | .... | .... | 1 | 1 | 4 | 2 | 3 | .... | .... |
| .... | .... | 1 | .... | .... | .... | 2 | 2 | .... | 3 | 1 | 7 | 4 | 3 | 11 | .... | 5 | 3 | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 1 | .... | .... | .... | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 2 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 2 | 1 | 1 | .... | 2 | .... | 2 | .... | .... | 2 | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | 2 | .... | 2 |
| .... | .... | 1 | .... | .... | .... | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 13 | 4 | 3 | 1 | 5 |
| .... | .... | .... | .... | .... | .... | .... | 2 | 1 | 8 | .... | .... | 2 | 1 | 4 | .... | 2 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 7 | 1 | 2 | .... | 2 | 5 | 1 | 6 | .... | 5 | 1 | 4 |
| .... | .... | .... | .... | .... | .... | .... | 2 | .... | 3 | .... | 1 | 1 | 1 | 2 | 1 | 5 | 1 | .... |
| .... | .... | .... | .... | 1 | .... | .... | 2 | .... | 1 | .... | 1 | 1 | 2 | 1 | .... | 2 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... | .... | 3 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | 2 | .... | 1 | 2 | .... |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| HORNELLSVILLE | 12,060 | 14 | ..... | 1 | 7.0 | 4 | 70 | .... | .... |
| *Bath* | 5,000 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| CORNING | 11,061 | 14 | ..... | 3 | 21.0 | 1 | ..... | .... | .... |
| Wellsville | 5,000 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| OLEAN | 9,462 | 8 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| *Salamanca* | 4,251 | 7 | ..... | 1 | 14.2 | 0 | ..... | .... | .... |
| DUNKIRK | 11,616 | 17 | ..... | 4 | 23.6 | 1 | ..... | .... | .... |
| JAMESTOWN | 22,892 | 19 | ..... | 2 | 10.6 | 7 | 50 | .... | 1 |
| *Westfield* | 2,430 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Fredonia* | 4,125 | 4 | ..... | 1 | 25.0 | 1 | 500 | .... | .... |
| Rest of district | 248,500 | 218 | 10.5 | 29 | 13.5 | 73 | 36 | 1 | .... |
| EAST CENTRAL DISTRICT Totals | 401,082 | 457 | 13.5 | 88 | 19.5 | 117 | 144 | 3 | 5 |
| SYRACUSE | 108,374 | 145 | 15.8 | 44 | 30.5 | 18 | 225 | 2 | 2 |
| *Baldwinsville* | 3,000 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| De Witt | 5,435 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| CORTLAND | 9,014 | 11 | ..... | 1 | 9.0 | 1 | 90 | .... | .... |
| *Homer* | 2,381 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Oneida* | 7,942 | 10 | ..... | 1 | 10.0 | 2 | 200 | .... | 1 |
| Hamilton | 3,744 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| Cazenovia | 3,830 | 5 | ..... | 1 | 20.0 | 3 | ..... | .... | .... |
| Brookfield | 2,726 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Norwich* | 5,766 | 11 | ..... | 3 | 27.3 | 2 | 180 | .... | .... |
| *Oneonta* | 7,147 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Worcester | 2,409 | 3 | ..... | 0 | ..... | 2 | 666 | .... | .... |
| *Cooperstown* | 2,368 | 4 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Walton | 4,869 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Delhi | 3,243 | 3 | ..... | 1 | 33.3 | 0 | ..... | .... | .... |
| Liberty | 4,568 | 16 | ..... | 2 | 12.5 | 1 | 125 | .... | .... |
| Rest of district | 225,844 | 231 | 12.0 | 34 | 15.0 | 82 | 96 | 1 | 2 |
| WEST CENTRAL DISTRICT Totals | 405,946 | 328 | 12.0 | 44 | 14.0 | 102 | 100 | 2 | 2 |
| AUBURN | 30,345 | 33 | 13.0 | 9 | 27.6 | 8 | 275 | .... | 1 |
| ITHACA | 13,136 | 15 | ..... | 4 | 33.3 | 3 | 133 | .... | .... |
| Hector | 4,137 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| *Waterloo* | 4,256 | 5 | ..... | 1 | 20.0 | 0 | 200 | .... | .... |
| *Seneca Falls* | 6,519 | 10 | ..... | 2 | 20.0 | 2 | 100 | .... | .... |
| GENEVA | 10,433 | 12 | ..... | 2 | 16.7 | 1 | 82 | .... | .... |
| *Canandaigua* | 6,151 | 4 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Manchester | 4,733 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Phelps | 4,788 | 3 | ..... | 1 | 33.3 | 1 | 333 | .... | .... |
| *Penn Yan* | 4,650 | 10 | ..... | 2 | 20.0 | 2 | 200 | .... | .... |
| *Batavia* | 9,180 | 10 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| *Dansville* | 3,633 | 4 | ..... | 2 | 50.0 | 0 | ..... | .... | .... |
| *Le Roy* | 3,144 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Warsaw | 4,341 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| Rest of district | 206,500 | 208 | 11.5 | 18 | 9.0 | 75 | 75 | 2 | 1 |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 879,022 | 1,029 | 14.0 | 316 | 30.0 | 186 | 215 | 9 | 12 |
| BUFFALO | 352,387 | 467 | 15.6 | 187 | 40.0 | 51 | 250 | 5 | 3 |
| *TONAWANDA* | 7,421 | 6 | ..... | 2 | 33.3 | 0 | ..... | .... | .... |
| *Amherst* | 4,223 | 1 | ..... | 1 | ..... | 0 | ..... | .... | .... |

FOR JULY—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | 1 | .... | .... | .... | .... | 1 | 1 | .... | 4 | .... | 3 | 2 | 1 | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | 1 | 1 | 2 | 1 | 1 | 3 | 1 | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | 1 | .... | 1 | 3 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | 2 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 5 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 3 | 2 | 4 | 5 | 3 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | 1 | .... | 2 | .... | .... |
| .... | .... | 2 | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | .... | .... | .... | .... |
| 2 | .... | .... | .... | .... | 1 | 1 | 3 | 5 | 14 | 1 | 17 | 22 | 24 | 46 | 9 | 24 | 21 | 27 |
| .... | 1 | 1 | 6 | .... | 4 | 1 | 44 | 17 | 46 | 5 | 40 | 25 | 51 | 54 | 21 | 48 | 45 | 40 |
| .... | .... | .... | .... | .... | .... | 1 | 28 | 5 | 15 | 1 | 12 | 9 | 15 | 17 | 7 | 17 | 3 | 11 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 2 | .... | .... | 4 | 1 | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | 1 | .... | 2 | 1 | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | 1 | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | 1 | 2 | 1 | 3 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | .... | .... | 1 |
| .... | .... | .... | 2 | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | 7 | .... | .... | 1 | .... | .... | 1 | .... | 1 | 3 |
| .... | 1 | .... | 3 | .... | 2 | .... | 13 | 11 | 22 | 4 | 22 | 11 | 30 | 23 | 10 | 21 | 34 | 21 |
| 2 | .... | 1 | 5 | 1 | 7 | .... | 13 | 13 | 31 | 4 | 26 | 23 | 39 | 43 | 25 | 32 | 31 | 28 |
| .... | .... | .... | .... | .... | .... | .... | 8 | 1 | 4 | .... | 3 | 1 | 3 | 2 | .... | 4 | 2 | 4 |
| .... | .... | .... | .... | .... | .... | .... | 2 | 1 | 2 | .... | 1 | 2 | 2 | 1 | .... | 1 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 2 | .... | .... | .... | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | 1 | .... | .... | .... | 2 | .... | 1 | .... | 1 | 1 | 2 | .... | 2 | .... |
| .... | .... | .... | .... | .... | 1 | .... | .... | .... | 2 | .... | 1 | 1 | 1 | 3 | 2 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... |
| .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | .... | 1 | 2 | 1 | 1 | 1 | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | 3 | 1 | 1 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 2 | .... | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | .... | 1 |
| 2 | .... | 1 | 4 | 1 | 3 | .... | 2 | 9 | 20 | 4 | 16 | 14 | 25 | 27 | 14 | 24 | 22 | 17 |
| .... | .... | 4 | 2 | 4 | 10 | 5 | 170 | 41 | 78 | 4 | 91 | 60 | 99 | 143 | 57 | 97 | 53 | 90 |
| .... | .... | 3 | 1 | .... | 5 | 3 | 100 | 30 | 39 | 1 | 39 | 31 | 30 | 51 | 19 | 42 | 20 | 45 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | 1 | 1 | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*) | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 4 | ..... | 1 | 25.0 | 1 | 250 | .... | .... |
| LOCKPORT | 16,581 | 30 | ..... | 12 | 40.0 | 5 | 300 | .... | 2 |
| NIAGARA FALLS | 19,457 | 27 | 15.5 | 10 | 37.0 | 3 | 255 | .... | 2 |
| *Medina* | 4,716 | 3 | ..... | 1 | 33.3 | 1 | 333 | .... | .... |
| *Albion* | 4,477 | 7 | ..... | 2 | 28.5 | 4 | 285 | .... | .... |
| *Brockport* | 3,400 | 5 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| ROCHESTER | 162,608 | 187 | 14.0 | 49 | 25.0 | 32 | 200 | 2 | 2 |
| Palmyra | 3,758 | 6 | ..... | 1 | 16.7 | 3 | 167 | .... | 1 |
| *Newark* | 4,578 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Lyons | 5,824 | 11 | ..... | 1 | 9.0 | 4 | ..... | .... | .... |
| *Clyde* | 2,507 | 2 | ..... | 0 | ..... | 2 | 500 | .... | .... |
| OSWEGO | 22,200 | 25 | 13.5 | 8 | 35.0 | 6 | 240 | 1 | .... |
| *Fulton* | 5,281 | 13 | ..... | 4 | 30.0 | 1 | 150 | .... | 1 |
| Richland | 3,535 | 3 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Rest of district | 247,000 | 232 | 12.0 | 37 | 16.0 | 67 | 120 | 1 | 1 |
| Totals for the state | 7,268,000 | 12,298 | 19.8 | 4,344 | 35.5 | 1,707 | 236 | 51 | 99 |
| Average for past five years | ..... | 11,661 | 22.0 | 5,377 | 46.1 | ..... | 280 | 58 | 96 |

ɪ JULY—(*Concluded*)

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | 1 | ..... | ..... | .... | ..... | .... | ..... | ..... | 1 | 1 | 1 | .... |
| .... | .... | 1 | .... | .... | .... | 7 | 1 | ..... | .... | 2 | .... | 5 | 6 | .... | 2 | .... | 4 |
| .... | .... | .... | 1 | 1 | 1 | 3 | 1 | 5 | .... | 3 | 2 | ..... | 1 | 1 | 1 | .... | 5 |
| .... | .... | .... | .... | .... | .... | 1 | ..... | ..... | .... | ..... | .... | ..... | 1 | .... | .... | 1 | .... |
| .... | .... | .... | .... | 2 | .... | .... | ..... | ..... | .... | ..... | .... | 2 | 3 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | ..... | 1 | .... | 1 | .... | ..... | 1 | .... | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | 33 | 4 | 8 | 1 | 18 | 15 | 26 | 24 | 14 | 16 | 10 | 14 |
| .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | 1 | .... | 2 | ..... | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | ..... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | 2 | 3 | 2 | 2 | 2 | .... |
| .... | .... | .... | .... | .... | .... | 1 | ..... | ..... | .... | ..... | .... | ..... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | 1 | .... | 4 | ..... | 4 | .... | 1 | 1 | 2 | 4 | 1 | 3 | 1 | 2 |
| .... | .... | .... | .... | .... | .... | 1 | ..... | ..... | .... | 1 | .... | 2 | 3 | 1 | 4 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | 1 | ..... | 1 | .... | .... | 1 | .... |
| .... | 1 | .... | 3 | 1 | 1 | 19 | 5 | 20 | 2 | 24 | 10 | 28 | 43 | 16 | 25 | 15 | 17 |
| 89 | 105 | 79 | 17 | 73 | 125 | 2234 | 602 | 1,072 | 79 | 615 | 779 | 829 | 1,183 | 434 | 2021 | 416 | 1,372 |
| 1 | 52 | 85 | 16 | 121 | 244 | 2566 | 713 | 1,044 | 77 | 1,237 | 646 | 772 | 1,071 | 354 | 671 | 395 | 1,406 |

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| MARITIME DISTRICT Totals | 3,852,922 | 6,767 | 20.6 | 3,280 | 48.5 | 504 | 337 | 25 | 79 |
| CITY OF NEW YORK Totals | 3,536,517 | 6,269 | 20.8 | 3,082 | 49.2 | 426 | 345 | 23 | 7 |
| BOROUGH OF MANHATTAN | 1,873,562 | 3,223 | 20.2 | 1,591 | 49.4 | 184 | 312 | 15 | 36 |
| BOROUGH OF THE BRONX | 222,124 | 423 | 23.0 | 166 | 40.0 | 28 | 310 | 1 | 4 |
| BOROUGH OF BROOKLYN | 1,209,064 | 2,158 | 21.0 | 1,081 | 50.0 | 161 | 376 | 7 | 30 |
| BOROUGH OF QUEENS | 162,834 | 302 | 21.7 | 145 | 48.0 | 33 | 360 | .... | 4 |
| BOROUGH OF RICHMOND | 68,933 | 163 | 27.8 | 99 | 60.7 | 20 | 447 | .... | 2 |
| Oyster Bay | 16,334 | 40 | ..... | 13 | 32.5 | 9 | 175 | .... | .... |
| Hempstead | 27,066 | 38 | 17.0 | 16 | 44.0 | 5 | 250 | .... | .... |
| North Hempstead | 12,048 | 25 | ..... | 10 | 40.0 | 4 | 240 | .... | .... |
| Southold | 8,301 | 10 | ..... | 4 | 40.0 | 2 | 200 | .... | .... |
| *Sag Harbor* | 2,000 | 6 | ..... | 3 | 50.0 | 1 | 166 | .... | .... |
| Huntington | 9,483 | 13 | ..... | 5 | 38.5 | 4 | 385 | .... | .... |
| Brookhaven | 14,592 | 14 | ..... | 3 | 21.5 | 4 | 72 | .... | .... |
| YONKERS | 47,931 | 44 | 10.8 | 17 | 38.2 | 5 | 180 | .... | .... |
| Greenburgh | 15,564 | 28 | ..... | 13 | 46.5 | 4 | 400 | .... | .... |
| MOUNT VERNON | 20,346 | 35 | 21.0 | 13 | 37.1 | 6 | 315 | .... | .... |
| *Port Chester* | 7,440 | 21 | ..... | 14 | 66.6 | 2 | 430 | .... | 1 |
| *Ossining* | 7,939 | 16 | ..... | 5 | 31.2 | 2 | 185 | .... | 1 |
| NEW ROCHELLE | 14,720 | 27 | ..... | 14 | 53.5 | 7 | 300 | 1 | .... |
| *Peekskill* | 10,358 | 18 | ..... | 10 | 55.5 | 0 | 333 | .... | .... |
| *White Plains* | 7,900 | 18 | ..... | 8 | 44.4 | 3 | 150 | .... | .... |
| Rest of district | 85,000 | 145 | 19.5 | 48 | 34.0 | 21 | 265 | 1 | 1 |
| HUDSON VALLEY DISTRICT Totals | 690,143 | 921 | 15.6 | 235 | 25.6 | 178 | 220 | 4 | 21 |
| ALBANY | 94,151 | 134 | 16.8 | 27 | 20.0 | 16 | 142 | .... | 3 |
| COHOES | 24,000 | 31 | 15.2 | 12 | 40.0 | 3 | 300 | .... | 1 |
| TROY | 75,057 | 129 | 20.0 | 39 | ..... | 13 | ..... | 2 | 4 |
| WATERVLIET | 14,321 | 17 | ..... | 4 | 23.5 | 2 | 117 | .... | .... |
| *Green Island* | 4,770 | 6 | ..... | 2 | 33.3 | 0 | 500 | .... | 2 |
| *Hoosick Falls* | 5,671 | 9 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| RENSSELAER | 7,466 | 15 | ..... | 5 | 33.3 | 1 | 333 | .... | .... |
| Coxsackie | 4,102 | 5 | ..... | 2 | 40.0 | 2 | 400 | .... | .... |
| *Catskill* | 5,486 | 7 | ..... | 4 | 57.0 | 0 | 428 | .... | .... |
| HUDSON | 9,528 | 14 | ..... | 2 | 12.8 | 4 | 65 | .... | .... |
| KINGSTON | 24,535 | 37 | 18.0 | 10 | 27.0 | 10 | 270 | .... | 1 |
| *Ellenville* | 3,000 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Marbletown | 3,511 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Rosendale | 6,278 | 10 | ..... | 4 | | 1 | ..... | .... | .... |
| Esopus | 4,907 | 9 | ..... | 4 | 50.0 | 0 | 250 | .... | .... |
| *Saugerties* | 3,700 | 6 | ..... | 3 | 50.0 | 2 | 333 | .... | .... |
| POUGHKEEPSIE | 24,029 | 31 | 15.2 | 5 | 16.5 | 7 | 98 | .... | 1 |
| Fishkill | 13,016 | 13 | ..... | 2 | 15.4 | 2 | 75 | .... | .... |
| *Wappingers Falls* | 3,504 | 3 | ..... | 1 | 33.3 | 0 | 333 | .... | .... |
| NEWBURGH | 25,000 | 43 | 20.0 | 16 | 37.5 | 7 | 380 | 1 | .... |
| *Port Jervis* | 9,385 | 8 | ..... | 3 | 33.3 | 0 | 222 | .... | .... |
| MIDDLETOWN | 14,522 | 25 | ..... | 8 | 32.0 | 3 | 320 | .... | .... |
| Warwick | 6,403 | 9 | ..... | 2 | 22.2 | 4 | 111 | .... | .... |
| *Goshen* | 4,564 | 7 | ..... | 1 | 14.2 | 3 | 142 | .... | .... |

TATE DEPARTMENT OF HEALTH

*cities, villages and towns during August,* 1901

*talic* and towns in roman type]

| IOTIC DISEASES | | | | | OTHER CAUSES OF DEATH | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 4 34 | 5 | 40 | 92 | 1891 | 389 | 679 | 44 | 297 | 392 | 404 | 467 | 182 | 381 | 113 | 1,142 |
| 3 33 | 5 | 38 | 88 | 1785 | 376 | 632 | 40 | 243 | 365 | 362 | 401 | 176 | 350 | 95 | 1,079 |
| 8 10 | 5 | 21 | 48 | 841 | 194 | 319 | 21 | 132 | 166 | 187 | 208 | 101 | 233 | 47 | 611 |
| 1 1 | .... | 2 | 7 | 81 | 12 | 91 | .... | 17 | 21 | 29 | 32 | 11 | 17 | 5 | 57 |
| 1 22 | .... | 12 | 31 | 701 | 139 | 183 | 17 | 76 | 156 | 120 | 119 | 55 | 75 | 30 | 355 |
| 2 .... | .... | 2 | 2 | 93 | 23 | 32 | 2 | 8 | 16 | 18 | 26 | 3 | 14 | 7 | 47 |
| 1 .... | .... | 1 | .... | 69 | 9 | 7 | .... | 10 | 6 | 10 | 16 | 6 | 11 | 6 | 9 |
| 1 .... | .... | .... | .... | 6 | 4 | 5 | .... | 2 | 2 | 2 | 5 | 1 | 4 | 5 | 3 |
| .... | .... | .... | .... | 9 | 1 | 5 | .... | 5 | .... | 6 | 3 | 1 | .... | 1 | 7 |
| . 1 | .... | .... | 1 | 4 | ..... | 3 | .... | 4 | 1 | 3 | 3 | .... | 1 | .... | 4 |
| . .... | .... | .... | .... | 2 | ..... | ..... | .... | 2 | .... | 1 | 3 | .... | 1 | .... | 1 |
| . .... | .... | .... | .... | 1 | ..... | 1 | .... | ..... | .... | ..... | 1 | .... | .... | 1 | 2 |
| . .... | .... | .... | .... | 5 | ..... | ..... | .... | ..... | 1 | 2 | 2 | .... | 2 | 1 | .... |
| . .... | .... | .... | .... | 1 | ..... | ..... | .... | 1 | 3 | 1 | 2 | .... | 2 | 1 | 3 |
| . .... | .... | .... | .... | 7 | 4 | 5 | .... | 2 | 4 | 4 | 7 | .... | 2 | .... | 8 |
| . .... | .... | .... | 2 | 8 | 1 | 1 | .... | 1 | .... | 3 | 5 | 1 | 1 | 1 | 3 |
| . .... | .... | 1 | .... | 10 | ..... | 1 | .... | 4 | 3 | 2 | 6 | .... | 2 | 3 | 3 |
| . .... | .... | .... | .... | 8 | 1 | 2 | .... | 2 | 2 | ..... | 1 | .... | .... | 1 | 3 |
| . .... | .... | .... | .... | 2 | ..... | 2 | .... | ..... | 1 | ..... | 3 | .... | 3 | .... | 4 |
| . .... | .... | .... | .... | 5 | ..... | 2 | 1 | 5 | 1 | ..... | 5 | 1 | .... | .... | 4 |
| .... | .... | .... | .... | 6 | ..... | 2 | 1 | 2 | .... | ..... | ..... | .... | 2 | .... | 5 |
| . .... | .... | .... | .... | 3 | ..... | 1 | .... | 2 | .... | 2 | 6 | .... | 1 | 1 | 3 |
| . .... | .... | 1 | 1 | 29 | 2 | 17 | 2 | 22 | 9 | 16 | 14 | 2 | 10 | 3 | 11 |
| 2 2 | 2 | 2 | 14 | 149 | 21 | 93 | 8 | 90 | 46 | 87 | 120 | 46 | 55 | 45 | 107 |
| . .... | .... | .... | 2 | 14 | 5 | 15 | 2 | 16 | 16 | 9 | 18 | 5 | 8 | 4 | 17 |
| . .... | .... | .... | .... | 8 | ..... | 4 | .... | 1 | 2 | 3 | 3 | .... | 1 | 1 | 7 |
| . 2 | 1 | 1 | 3 | 22 | 3 | 23 | .... | 12 | 6 | 7 | 11 | 8 | 8 | 3 | 13 |
| . .... | .... | .... | .... | 2 | ..... | 3 | .... | 1 | 1 | 2 | 3 | 1 | .... | 1 | 3 |
| . .... | .... | .... | .... | 1 | ..... | 1 | .... | ..... | .... | ..... | 1 | .... | .... | .... | 1 |
| . .... | .... | .... | .... | .... | ..... | 4 | .... | ..... | 1 | ..... | 3 | .... | .... | 1 | .... |
| . .... | .... | .... | 1 | 4 | ..... | ..... | .... | ..... | 1 | 1 | 2 | 1 | 1 | .... | 4 |
| . .... | .... | .... | .... | 2 | ..... | ..... | .... | ..... | .... | 1 | 1 | .... | .... | 1 | .... |
| . .... | .... | .... | 1 | 2 | ..... | 1 | .... | ..... | .... | ..... | ..... | .... | 1 | .... | 3 |
| . .... | .... | .... | .... | 1 | 1 | 2 | .... | 3 | 1 | 1 | 1 | .... | 1 | 2 | 1 |
| . .... | .... | .... | 1 | 8 | 2 | 1 | .... | 3 | .... | 5 | 4 | 3 | 4 | 2 | 3 |
| . .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | 1 | .... | .... | .... | .... |
| . .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | ..... | .... | .... | .... | .... |
| . .... | .... | .... | 2 | 1 | ..... | ..... | .... | 2 | 1 | ..... | 2 | .... | .... | 1 | 1 |
| 1 .... | .... | .... | .... | 1 | ..... | ..... | .... | 2 | 1 | 1 | 1 | .... | .... | .... | 2 |
| . .... | .... | .... | .... | 2 | ..... | ..... | .... | 1 | .... | ..... | 3 | .... | .... | .... | .... |
| . .... | .... | .... | .... | 2 | 1 | 3 | .... | 4 | .... | 5 | 2 | 1 | 1 | 3 | 8 |
| . .... | .... | .... | .... | 1 | ..... | 4 | .... | 1 | .... | 2 | 1 | .... | 2 | .... | 2 |
| . .... | .... | .... | .... | 1 | ..... | ..... | .... | 1 | .... | ..... | ..... | 1 | .... | .... | .... |
| . .... | .... | .... | .... | 15 | ..... | 3 | 1 | 3 | .... | 3 | 5 | 1 | 2 | 2 | 6 |
| . .... | .... | .... | .... | 1 | ..... | 1 | .... | ..... | .... | ..... | 1 | .... | 1 | .... | 3 |
| . .... | .... | .... | .... | 8 | ..... | 2 | .... | 3 | .... | 4 | 6 | .... | 1 | 1 | .... |
| . .... | .... | .... | .... | 1 | ..... | 1 | 1 | 1 | 1 | ..... | 2 | .... | .... | 2 | .... |
| . .... | .... | .... | .... | 1 | ..... | 1 | 1 | ..... | 1 | ..... | 1 | .... | .... | 2 | .... |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| HUDSON VALLEY DIST.—(*Con.*) | | | | | | | | | |
| Montgomery | 5,939 | 7 | ..... | 2 | 28.5 | 2 | 142 | .... | .... |
| Haverstraw | 9,874 | 3 | ..... | 2 | ..... | 0 | ..... | .... | .... |
| *Nyack* | 4,275 | 9 | ..... | 2 | ..... | 3 | ..... | .... | .... |
| Ramapo | 7,502 | 15 | ..... | 3 | 20.0 | 6 | 133 | .... | .... |
| Rest of district | 271,800 | 317 | 13.5 | 70 | 22.5 | 85 | 220 | 1 | 9 |
| ADIRONDACK AND NORTH'N DISTRICT Totals | 394,772 | 413 | 12.5 | 113 | 27.2 | 86 | 183 | .... | 6 |
| WATERTOWN | 21,700 | 34 | 18.5 | 10 | 30.0 | 9 | 175 | .... | 1 |
| Ellisburgh | 3,888 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Cape Vincent | 2,882 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Clayton | 4,313 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| OGDENSBURGH | 12,633 | 26 | ..... | 7 | 30.0 | 5 | 300 | .... | .... |
| Gouverneur | 6,000 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Potsdam* | 3,843 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Canton | 6,387 | 15 | ..... | 2 | 13.3 | 5 | 66 | .... | .... |
| *Malone* | 5,935 | 9 | ..... | 3 | 33.3 | 0 | 111 | .... | .... |
| *Plattsburgh* | 8,434 | 17 | ..... | 11 | 65.0 | 0 | 530 | .... | .... |
| *Glens Falls* | 12,613 | 20 | ..... | 8 | 40.0 | 1 | 350 | .... | 1 |
| *Whitehall* | 4,377 | 4 | ..... | 1 | ..... | 1 | ..... | .... | .... |
| Fort Edward | 5,216 | 10 | ..... | 3 | 30.0 | 2 | ..... | .... | .... |
| *Sandy Hill* | 4,473 | 8 | ..... | 1 | 12.5 | 3 | 125 | .... | .... |
| Granville | 5,217 | 5 | ..... | 3 | 60.0 | 1 | 600 | .... | .... |
| Greenwich | 4,172 | 12 | ..... | 8 | 66.6 | 0 | 583 | .... | .... |
| Lowville | 3,746 | 7 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Rest of district | 278,943 | 240 | 12.0 | 56 | 23.1 | 56 | 125 | .... | 4 |
| MOHAWK VALLEY DISTRICT Totals | 408,973 | 529 | 15.5 | 133 | 25.0 | 111 | 232 | 4 | 11 |
| SCHENECTADY | 31,682 | 77 | 28.5 | 32 | 41.5 | 11 | 375 | .... | 1 |
| Cobleskill | 3,973 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| AMSTERDAM | 20,929 | 21 | 12.2 | 7 | 33.3 | 1 | 400 | 1 | .... |
| *Fort Plain* | 2,444 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| JOHNSTOWN | 10,130 | 7 | ..... | 1 | 14.2 | 1 | 142 | .... | .... |
| GLOVERSVILLE | 18,349 | 16 | ..... | 2 | 12.5 | 0 | ..... | .... | .... |
| LITTLE FALLS | 10,381 | 8 | ..... | 2 | 25.0 | 3 | 250 | .... | .... |
| *Herkimer* | 5,555 | 15 | ..... | 3 | 20.0 | 1 | 133 | .... | 1 |
| *Ilion* | 5,138 | 8 | ..... | 3 | 37.5 | 2 | 375 | 1 | .... |
| UTICA | 56,383 | 84 | 17.4 | 33 | 38.5 | 6 | 322 | .... | 2 |
| Whitestown | 6,235 | 8 | ..... | 4 | 50.0 | 1 | 250 | .... | .... |
| ROME | 15,343 | 26 | ..... | 5 | 19.2 | 7 | 192 | .... | .... |
| Boonville | 3,332 | 1 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Camden | 3,745 | 6 | ..... | 0 | ..... | 1 | 333 | .... | 2 |
| Waterford | 6,157 | 6 | ..... | 2 | 33.3 | 1 | 333 | .... | .... |
| *Mechanicville* | 4,695 | 8 | ..... | 1 | 12.5 | 0 | 500 | .... | 1 |
| *Ballston Spa* | 3,923 | 6 | ..... | 2 | 33.3 | 2 | 333 | .... | 1 |
| *Saratoga Springs* | 12,409 | 31 | ..... | 1 | 33.0 | 9 | 130 | .... | 1 |
| Rest of district | 188,170 | 199 | 13.0 | 34 | 17.0 | 64 | 150 | 2 | 2 |
| SOUTHERN TIER DISTRICT Totals | 429,434 | 446 | 12.0 | 96 | 21.5 | 128 | 140 | 1 | 6 |
| BINGHAMTON | 39,647 | 51 | 16.5 | 8 | 16.0 | 12 | 120 | .... | .... |
| *Owego* | 5,039 | 6 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Candor | 3,330 | 5 | ..... | 2 | 40.0 | 1 | 200 | .... | .... |
| *Waverly* | 4,465 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| ELMIRA | 35,672 | 45 | 15.0 | 16 | 35.5 | 9 | 155 | .... | 1 |

FOR AUGUST—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| | | | | | | | 1 | | 1 | | | 1 | 1 | | | | 1 | 2 |
| | | | | | | | 1 | | | | 1 | | | 1 | | | | |
| | | | | | | | 1 | | 1 | | 1 | 1 | 2 | | 1 | 1 | | 1 |
| | | | | | | | 2 | | 1 | | | 2 | 1 | 4 | 1 | 2 | 2 | |
| 4 | | 1 | | 1 | 1 | 4 | 46 | 9 | 21 | 3 | 34 | 10 | 39 | 43 | 23 | 21 | 16 | 31 |
| | | | 1 | 1 | 3 | 2 | 63 | 10 | 54 | 3 | 48 | 16 | 44 | 37 | 18 | 35 | 25 | 47 |
| | | | | | | | 5 | 2 | 4 | 1 | 4 | 1 | 1 | 3 | 1 | 1 | 3 | 7 |
| | | | | | | | | | | | | | 1 | | | | | |
| | | | | | | | | | 1 | | | | | | | | | |
| | | | | | | | | | | | | | | | | 1 | | |
| | | | | | | | 7 | | 4 | | 2 | 1 | 1 | 3 | 2 | 3 | 2 | 1 |
| | | | | | | | 1 | | 1 | | | | | | 1 | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | 1 | | 3 | | 3 | | 3 | 1 | 2 | 2 | | |
| | | | | | | | 1 | | | | | 2 | 2 | | | 2 | | 2 |
| | | | | | | | 9 | | 1 | | 3 | | 1 | 2 | | | | 1 |
| | | | | | | | 6 | | 3 | | 3 | 1 | 1 | 2 | 2 | 1 | | |
| | | | | 1 | | | 1 | | | | | | | 1 | | 1 | | |
| | | | | | | | | 1 | 2 | | 1 | | | 1 | | 4 | | 1 |
| | | | | | | | 1 | | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 |
| | | | | | 2 | | 1 | 1 | | | | | | | | 1 | | |
| | | | | | | | 7 | | 2 | | | | 2 | | | | | 1 |
| | | | | | | | | | 1 | | 1 | 3 | | | 1 | 1 | | |
| | | | 1 | | 1 | 2 | 23 | 6 | 31 | 2 | 31 | 7 | 31 | 23 | 8 | 18 | 19 | 33 |
| 1 | | 2 | 1 | | 3 | 10 | 91 | 4 | 50 | 7 | 53 | 34 | 53 | 66 | 19 | 37 | 34 | 49 |
| | | | | | | 6 | 22 | | 7 | 1 | 4 | 6 | 6 | 4 | 3 | 6 | 2 | 9 |
| | | | | | | | | | | | 1 | | | | | | 1 | |
| | | | | | | | 7 | 1 | 2 | | 1 | 2 | | | 2 | 3 | | 2 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | 1 | | 1 | | | 1 | | 1 | | | 1 | 2 |
| | | | | | | | | | 1 | | 1 | 2 | 3 | 3 | | 1 | | 5 |
| | | | | | | | 2 | | | 1 | 1 | | 1 | | | 1 | 2 | |
| | | | | | | 1 | | | 1 | 2 | 1 | 1 | | 2 | | 4 | | 2 |
| | | | | | | | 2 | | 1 | | | | 1 | 1 | | | 2 | |
| | | 1 | | | 2 | 2 | 20 | | 7 | | 9 | 2 | 8 | 13 | 3 | 4 | 1 | 10 |
| | | | | | | | 2 | | | | 1 | 1 | 1 | 1 | | | 1 | 1 |
| | | | | | | | 5 | | 6 | | 5 | | 3 | 4 | | | | 3 |
| | | | | | | | | | | | | | | 1 | | | | |
| | | | | | | | | | | | 2 | | 1 | | 1 | | | |
| | | | | | | | 2 | | | 1 | 1 | | | | | 2 | | |
| | | | | | | | 3 | | | | 1 | | | | 2 | | | 1 |
| | | | | | | | 1 | | 1 | | | | | | | 1 | 2 | |
| 1 | | | | | | | 2 | 2 | 2 | | 7 | 4 | 3 | 4 | | 2 | 2 | 1 |
| | | 1 | 1 | | 1 | 1 | 22 | 1 | 21 | 2 | 18 | 15 | 26 | 32 | 8 | 13 | 20 | 13 |
| | | | | | 7 | 2 | 43 | 9 | 24 | 2 | 45 | 33 | 48 | 71 | 29 | 32 | 38 | 56 |
| | | | | | | | 6 | | 4 | | 5 | 3 | 5 | 10 | 3 | 2 | 6 | 7 |
| | | | | | | | | | 1 | | | | 1 | 4 | | | | |
| | | | | | | | 1 | | | | | | 1 | 1 | | 1 | | 1 |
| | | | | | | | | | | | | | 1 | 3 | | | | |
| | | | | | | 1 | 5 | 1 | 3 | | 1 | 5 | 2 | 5 | 4 | 8 | | 9 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 12 | ..... | 4 | 33.3 | 2 | 250 | .... | .... |
| HORNELLSVILLE | 12,000 | 12 | ..... | 5 | 41.3 | 1 | 666 | .... | .... |
| *Bath* | 5,000 | 11 | ..... | 2 | 18.2 | 4 | ..... | .... | .... |
| CORNING | 11,061 | 14 | ..... | 5 | 35.7 | 1 | 570 | 1 | 2 |
| Wellsville | 5,000 | 11 | ..... | 2 | 18.2 | 5 | 90 | .... | 1 |
| OLEAN | 9,462 | 5 | ..... | 1 | 20.0 | 1 | 200 | .... | 1 |
| *Salamanca* | 4,251 | 5 | ..... | 2 | ..... | 0 | ..... | .... | .... |
| DUNKIRK | 11,616 | 17 | ..... | 9 | 53.0 | 1 | 235 | .... | .... |
| JAMESTOWN | 22,892 | 21 | 12.0 | 2 | 9.5 | 2 | ..... | .... | .... |
| *Westfield* | 2,430 | 2 | ..... | 1 | 50.0 | 1 | ..... | .... | .... |
| *Fredonia* | 4,127 | 5 | ..... | 3 | 60.0 | 1 | 200 | .... | .... |
| Rest of district | 248,500 | 218 | 11.5 | 34 | 15.5 | 80 | 95 | .... | 1 |
| EAST CENTRAL DISTRICT Totals | 401,082 | 456 | 13.5 | 76 | 16.7 | 132 | 160 | .... | 7 |
| SYRACUSE | 108,374 | 130 | 14.0 | 36 | 27.7 | 23 | 200 | .... | 2 |
| *Baldwinsville* | 3,000 | 4 | ..... | 1 | 25.0 | 3 | 250 | .... | .... |
| De Witt | 5,435 | 4 | ..... | 1 | 25.0 | 1 | 250 | .... | .... |
| CORTLAND | 9,014 | 6 | ..... | 2 | 33.3 | 3 | 166 | .... | .... |
| *Homer* | 2,381 | 4 | ..... | 2 | ..... | 0 | 500 | .... | .... |
| *Oneida* | 7,942 | 10 | ..... | 1 | 10.0 | 2 | 100 | .... | .... |
| Hamilton | 3,744 | 8 | ..... | 0 | ..... | 4 | 250 | .... | .... |
| Cazenovia | 3,830 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Brookfield | 2,726 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Norwich* | 5,766 | 13 | ..... | 2 | 15.3 | 5 | 230 | .... | .... |
| *Oneonta* | 7,147 | 7 | ..... | 1 | 14.3 | 3 | 143 | .... | .... |
| Worcester | 2,409 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Cooperstown* | 2,368 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Walton | 4,869 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Delhi | 3,243 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Liberty | 4,568 | 16 | ..... | 0 | ..... | 2 | 125 | .... | 1 |
| Rest of district | 225,844 | 241 | 13.0 | 30 | 12.5 | 83 | 138 | .... | 4 |
| WEST CENTRAL DISTRICT Totals | 315,846 | 339 | 12.5 | 48 | 14.1 | 107 | 132 | .... | 5 |
| AUBURN | 30,345 | 40 | 15.6 | 9 | 22.5 | 10 | 250 | .... | 1 |
| ITHACA | 13,136 | 8 | ..... | 3 | 37.5 | 2 | 750 | .... | 1 |
| Hector | 4,137 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| *Waterloo* | 4,256 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 15 | ..... | 4 | 26.7 | 3 | 133 | .... | .... |
| GENEVA | 10,433 | 16 | ..... | 4 | 25.0 | 2 | 195 | .... | .... |
| *Canandaigua* | 6,151 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Manchester | 4,733 | 3 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Phelps | 4,788 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Penn Yan* | 4,650 | 8 | ..... | 0 | ..... | 2 | 125 | .... | .... |
| *Batavia* | 9,180 | 17 | ..... | 2 | 11.8 | 4 | 178 | .... | .... |
| *Dansville* | 3,633 | 4 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Le Roy* | 3,144 | 3 | ..... | 2 | 66.6 | 1 | 333 | .... | .... |
| Warsaw | 4,341 | 3 | ..... | 1 | 33.3 | 1 | 333 | .... | .... |
| Rest of district | 206,500 | 212 | 12.3 | 21 | 10.0 | 77 | 85 | .... | 3 |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 879,022 | 1,128 | 15.0 | 358 | 32.0 | 172 | 275 | 9 | 33 |
| BUFFALO | 352,387 | 551 | 18.5 | 226 | 41.0 | 66 | 340 | 5 | 18 |
| *TONAWANDA* | 7,421 | 13 | ..... | 5 | 38.5 | 2 | 300 | .... | 1 |
| *Amherst* | 4,223 | 5 | ..... | 1 | ..... | 1 | ..... | .... | .... |

OR AUGUST—(*Continued*)

| | Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .. | .... | .... | .... | .... | .... | .... | 3 | ..... | ..... | .... | 2 | 1 | ..... | 1 | 1 | 1 | .... | 3 |
| .. | .... | .... | .... | .... | 3 | 1 | 4 | ..... | ..... | .... | ..... | 1 | ..... | 2 | .... | 1 | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | .... | 2 | ..... | .... | ..... | .... | 1 | 3 | .... | 1 | 2 | 2 |
| .. | .... | .... | .... | .... | .... | .... | 5 | ..... | ..... | .... | 1 | .... | 1 | ..... | .... | 2 | 1 | 1 |
| .. | .... | .... | .... | .... | .... | .... | .... | 1 | ..... | .... | 3 | .... | 1 | ..... | 1 | .... | 3 | 1 |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | 1 | .... | ..... | .... | 1 | 2 | .... | .... | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | 2 | 1 | .... | 1 | .... | 1 |
| .. | .... | .... | .... | .... | .... | .... | 4 | ..... | 1 | .... | 4 | 1 | 2 | 2 | 2 | .... | .... | 1 |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | 4 | 2 | 3 | 3 | 1 | 3 | 1 | 4 |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | 1 | ..... | ..... | .... | .... | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | 1 | ..... | ..... | .... | 2 | 1 | ..... | ..... | .... | .... | .... | 1 |
| .. | .... | .... | .... | .... | 4 | .... | 14 | 5 | 14 | 2 | 21 | 18 | 27 | 34 | 17 | 12 | 25 | 24 |
| .. | .... | .... | 1 | .... | 4 | 9 | 52 | 16 | 58 | 5 | 34 | 26 | 66 | 70 | 33 | 13 | 29 | 33 |
| .. | .... | .... | 1 | .... | 1 | .... | 21 | 8 | 15 | 1 | 11 | 5 | 13 | 14 | 15 | 5 | 4 | 14 |
| .. | .... | .... | .... | .... | .... | 1 | .... | ..... | ..... | .... | ..... | .... | ..... | 1 | 1 | .... | 1 | .... |
| .. | .... | .... | .... | .... | .... | .... | 1 | ..... | 1 | .... | 1 | .... | 1 | ..... | .... | .... | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | 1 | ..... | ..... | .... | 2 | .... | 2 | ..... | .... | .... | .... | 1 |
| .. | .... | .... | .... | .... | .... | .... | 2 | ..... | ..... | .... | ..... | 1 | 1 | ..... | .... | .... | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | 1 | 1 | 3 | .... | ..... | 1 | ..... | 1 | 1 | .... | 1 | 1 |
| .. | .... | .... | .... | .... | .... | .... | 2 | ..... | ..... | .... | ..... | 1 | 2 | 1 | .... | .... | 1 | 1 |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | ..... | .... | .... | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | 1 | ..... | ..... | .... | 1 | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | 3 | ..... | 2 | .... | 1 | 1 | 1 | 1 | 1 | .... | 1 | 2 |
| .. | .... | .... | .... | .... | .... | .... | 1 | ..... | ..... | .... | ..... | .... | 1 | 1 | 2 | 1 | 1 | .... |
| .. | .... | .... | .... | .... | .... | .... | 1 | ..... | ..... | .... | ..... | .... | 2 | 1 | .... | .... | .... | 1 |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | 1 | .... | ..... | .... | ..... | ..... | .... | .... | 1 | 1 |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | ..... | .... | .... | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | 1 | .... | ..... | .... | 1 | ..... | .... | .... | .... | .... |
| .. | .... | .... | .... | .... | .... | 1 | .... | ..... | 9 | .... | 1 | .... | 4 | ..... | .... | .... | .... | .... |
| .. | .... | .... | .... | .... | 3 | 7 | 19 | 7 | 26 | 4 | 18 | 16 | 38 | 50 | 13 | 6 | 18 | 12 |
| 1 | .... | 1 | .... | .... | 6 | 3 | 29 | 11 | 32 | 3 | 33 | 24 | 41 | 49 | 22 | 30 | 25 | 24 |
| .. | .... | .... | .... | .... | .... | .... | 9 | 1 | 3 | .... | 2 | 3 | 4 | 4 | 5 | 4 | 1 | 3 |
| .. | .... | .... | .... | .... | .... | 1 | 4 | ..... | ..... | .... | ..... | .... | ..... | ..... | .... | 2 | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | 1 | 1 | .... | .... | 1 |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | 2 | ..... | 2 | .... | 1 | 1 | .... |
| .. | .... | .... | .... | .... | .... | .... | 2 | 2 | 3 | .... | 2 | .... | 1 | 1 | .... | 1 | 1 | 2 |
| .. | .... | .... | .... | .... | .... | .... | 3 | 1 | ..... | .... | 1 | 3 | 2 | 2 | 1 | 1 | 1 | 1 |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | ..... | .... | .... | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | 1 | .... | 2 | .... | ..... | ..... | .... | .... | .... | .... |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | ..... | .... | .... | 1 | .... |
| .. | .... | .... | .... | .... | 1 | .... | .... | ..... | 1 | .... | ..... | .... | 1 | ..... | 1 | 1 | 1 | 2 |
| .. | .... | .... | .... | .... | 2 | .... | 1 | ..... | 5 | .... | 1 | 1 | 1 | 2 | 2 | .... | 1 | 1 |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | 2 | .... | 1 | ..... | .... | .... | .... | 1 |
| .. | .... | 1 | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | ..... | .... | 1 | 1 | .... |
| .. | .... | .... | .... | .... | .... | .... | 1 | ..... | ..... | .... | ..... | .... | ..... | 1 | .... | 1 | .... | .... |
| 1 | .... | .... | .... | .... | 3 | 2 | 9 | 7 | 19 | 3 | 23 | 15 | 31 | 36 | 11 | 18 | 18 | 13 |
| .. | .... | .... | 1 | 1 | 15 | 10 | 237 | 49 | 88 | 9 | 93 | 58 | 88 | 113 | 62 | 100 | 52 | 110 |
| .. | .... | .... | 1 | .... | 10 | 5 | 148 | 32 | 45 | 4 | 30 | 28 | 32 | 52 | 26 | 42 | 27 | 46 |
| .. | .... | .... | .... | .... | .... | .... | 3 | ..... | 1 | .... | ..... | 1 | ..... | ..... | .... | 4 | 1 | 2 |
| .. | .... | .... | .... | .... | .... | .... | .... | ..... | ..... | .... | ..... | .... | ..... | ..... | 1 | .... | 1 | 3 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*) | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 21 | ..... | 8 | 38.1 | 2 | 285 | .... | 1 |
| LOCKPORT | 16,581 | 28 | ..... | 6 | 21.4 | 4 | 214 | .... | 1 |
| NIAGARA FALLS | 19,457 | 28 | 17.0 | 8 | 28.5 | 0 | 142 | .... | 4 |
| *Medina* | 4,716 | 7 | ..... | 1 | 14.2 | 3 | ..... | .... | .... |
| *Albion* | 4,477 | 10 | ..... | 4 | 40.0 | 1 | 100 | .... | .... |
| *Brockport* | 3,400 | 3 | ..... | 0 | ..... | 1 | 333 | .... | .... |
| ROCHESTER | 162,608 | 171 | 12.5 | 41 | 24.1 | 23 | 240 | 4 | 3 |
| Palmyra | 3,758 | 4 | ..... | 1 | 25.0 | 2 | ..... | .... | .... |
| *Newark* | 4,578 | 10 | ..... | 2 | 20.0 | 1 | 100 | .... | .... |
| Lyons | 5,824 | 8 | ..... | 1 | 12.5 | 2 | ..... | .... | .... |
| *Clyde* | 2,507 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| OSWEGO | 22,200 | 28 | 15.0 | 6 | 21.5 | 9 | 178 | .... | .... |
| *Fulton* | 5,281 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Richland | 3,535 | 3 | ..... | 1 | 33.3 | 0 | 333 | .... | .... |
| Rest of district | 247,000 | 230 | 11.0 | 47 | 20.0 | 53 | 220 | .... | 5 |
| Totals for the state | 7,268,000 | 10,999 | 17.7 | 4,339 | 40.0 | 1,419 | 285 | 43 | 168 |
| Average for past five years | ..... | 10,982 | 19.5 | 4,310 | 40.0 | ..... | 240 | 46 | 161 |

REMARKS—A conference of sanitary officers of the state of New York will be held at Albany on October 24 and 25. It will commence with an evening session on the 24th, which will be held in the Assembly chamber of the Capitol, and it is expected that the meeting will be addressed by Governor Odell. The next day there will be a morning and afternoon session, and the conference will close with a banquet in the evening at the Hotel Ten Eyck.

The object of this gathering is to afford an opportunity for meeting and making the personal acquaintance of the local with the central health authorities, and in a personal conference to present, by addresses and discussions, subjects and matters which are of practical and immediate interest to boards of health and their executive officers. The State Department has always found it to be the case that its relations with local work have been very materially helped by personal contact and acquaintance with the local town officers, and it has been more agreeably and satisfactorily carried on where the exigencies of a case have brought representatives of the central office in personal touch with the local work and the men in immediate charge of it. This conference will give the health officers and the members of boards of health of towns and villages throughout the state and the State Commissioner and staff to meet, who have not heretofore; there are more than fifteen hundred local boards of health in the state, and with many of them the relations of the central bureau have of necessity been impersonal.

The discussion of practical sanitary matters is one of the chief objects of the conference and topics for this are chosen which, in the advisory capacity of the central department, it has been found that the executive officers of the local boards have asked for assistance in. A great deal can be done in this meeting by such discussions, in which the subjects of everyday interest will not only be presented by speakers chosen for the purpose, but opportunity given for questions regarding them to be asked and points of difficulty made clear. More general subjects also will be discussed, and those which are in the way of future work in sanitary affairs that are opening up for health boards in general or those which for many local boards are soon to demand attention. The members of local health boards and even the executive health officers are seldom specialists with training in this field of work, and a conference of this sort will be a school of instruction.

A partial program of the meeting has been prepared and is being sent out which includes the following topics: "Testing the Eyes of School Children," by Dr. P. A. Callen, of the New York Eye and Ear Infirmary; "Sewage Disposal for Cities and Villages," by Prof. O. H. Landreth, School of Engineering, Union College, and further discussed by J. J. R. Croes, president of the American Society of Civil Engineers; "*The Attitude* of Health Officers Toward Tuberculosis in the Smaller Cities and

AUGUST—(*Concluded*)

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| --- | --- | --- | --- | --- | 1 | 4 | --- | --- | --- | 3 | 1 | 3 | 1 | --- | 2 | 1 | 4 |
| --- | --- | --- | --- | --- | --- | 5 | 1 | 1 | --- | 6 | 2 | 1 | 2 | 1 | 4 | 3 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | 2 | 3 | 3 | 3 | 6 | --- | 5 |
| --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | --- | 4 | --- | --- | --- | --- | 1 |
| --- | --- | --- | --- | 1 | --- | --- | 1 | --- | --- | 2 | --- | 1 | 2 | --- | 1 | --- | 2 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | 1 | --- | --- | --- | --- |
| --- | --- | --- | --- | 2 | 2 | 29 | 6 | 14 | 1 | 21 | 11 | 14 | 21 | 14 | 11 | 2 | 16 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 2 | --- | --- | --- | 1 | --- |
| --- | --- | --- | --- | --- | --- | 1 | --- | 1 | --- | 1 | --- | --- | 1 | --- | 3 | 1 | 2 |
| --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | 5 | --- | 1 | --- | --- | 1 | 7 | 1 | 2 | 3 | 2 | 6 |
| --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 1 | --- | --- | 1 | 1 | 2 | --- | --- |
| --- | --- | --- | 1 | --- | --- | --- | --- | 1 | --- | 1 | --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | 2 | 2 | 42 | 6 | 22 | 4 | 26 | 9 | 20 | 27 | 11 | 21 | 12 | 21 |
| 40 | 49 | 40 | 9 | 80 | 142 | 2553 | 509 | 1,078 | 81 | 693 | 629 | 831 | 993 | 411 | 683 | 361 | 1,568 |
| 1 | 22 | 45 | 15 | 118 | 200 | 2000 | 605 | 1,037 | 77 | 1,14[illegible] | 654 | 778 | 1,001 | 380 | 871 | 427 | 1,367 |

ns," by Prof. Herman M. Biggs, of the health department of the city of New ;; "Milk Supply of Cities and Villages," by Dr. Ernest Wende, health commissioner uffalo; "Some Essentials of a Registration System," by Prof. Walter F. Willcox, e U. S. Census Office; "The Diagnosis of the Exanthemata," by Dr. F. C. Curtis, essor of dermatology in the Albany Medical College. The new serum laboratory the Bureau of Pathology will be described by Dr. H. D. Pease and Dr. George ner, who are in charge of these new departments. There will also be an exhibition isinfecting apparatus and their use demonstrated. A report of this conference ars elsewhere in this volume.

nitary conventions have been held in other states, but this is the first general meet- of this sort which has been called together by the State Department of Health his state in its twenty years of existence. The Commissioner of Health purposes ave such a meeting annually hereafter if the response to the present invitation the attendance upon it is such as to warrant it in the future.

e mortality of August has very uniformly been about 11,000, or that of the ent month, which makes it about 1000 above the average monthly mortality for year. The number of deaths this month is 1300 less than in July, which was sive. The only material decrease from last month has however been in deaths accident and violence, to which insolation or heat stroke added 1300 deaths, month being the cause of very few deaths; there were 5 deaths from lightning e and 54 from drowning.

ute diarrheal diseases have increased the mortality over last month, causing er cent of all deaths, against 18 per cent in July. This increase is seen in all anitary districts but is relatively greater in the rural than in the urban districts. mortality is however largely urban, 45 deaths occurring during the month in 00 population of cities of over 20,000, and 15 in the same number of the rest of tate.

phoid fever is increased from last month in all the districts, diphtheria to a small it, and whooping cough, which latter always has its largest mortality in August his state. All local diseases have caused fewer deaths. Deaths from acute respira- diseases have fallen to 500, which is low for this month, which is the month of its lest mortality; 280 of the deaths were from pneumonia. Outside of New York city were 210 deaths from Bright's disease.

allpox caused 40 deaths, all in the Maritime district, and since the first of August have been reported, 1 each at Schenevus and Tupper Lake, 2 at Hillburn, 3 at ville; and during September, to this issue, no case has been reported except at ra, where it has continued, and near the end of the month cases at Marlborough, r county.

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS.

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| MARITIME DISTRICT Totals | 3,852,922 | 6,173 | 19.5 | 2,647 | 42 8 | 532 | 254 | 17 | 101 |
| CITY OF NEW YORK Totals | 3,526,517 | 5,663 | 19.4 | 2,472 | 43.7 | 435 | 275 | 15 | 97 |
| BOROUGH OF MANHATTAN | 1,873,562 | 3,024 | 19.6 | 1,309 | 43 3 | 209 | 255 | 11 | 55 |
| BOROUGH OF THE BRONX | 222,124 | 372 | 20 8 | 127 | 34.2 | 46 | 243 | 2 | 7 |
| BOROUGH OF BROOKLYN | 1,209,064 | 1,909 | 19.0 | 892 | 46.7 | 138 | 310 | 2 | 31 |
| BOROUGH OF QUEENS | 162,834 | 248 | 18 2 | 105 | 42.4 | 27 | 245 | .... | 2 |
| BOROUGH OF RICHMOND | 68,933 | 110 | 19.4 | 39 | 35.5 | 15 | 300 | .... | 3 |
| Oyster Bay | 16,334 | 14 | ..... | 4 | 28.5 | 7 | 215 | .... | .... |
| Hempstead | 27,066 | 26 | 12.0 | 10 | 37.7 | 3 | 230 | .... | .... |
| North Hempstead | 12,048 | 20 | ..... | 7 | 35.0 | 2 | 150 | .... | .... |
| Southold | 8,301 | 9 | ..... | 0 | ..... | 5 | ..... | .... | .... |
| *Sag Harbor* | 2,000 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Huntington | 9,483 | 13 | ..... | 6 | 46.1 | 3 | 78 | .... | .... |
| Brookhaven | 14,592 | 21 | ..... | 7 | 33.3 | 2 | 190 | .... | .... |
| YONKERS | 47,931 | 75 | 19.0 | 26 | 34.6 | 12 | 186 | .... | 2 |
| Greenburgh* | 15,564 | 30 | ..... | 8 | 27.3 | 6 | 115 | .... | .... |
| MOUNT VERNON | 20,346 | 33 | 19.8 | 17 | 51.5 | 3 | 273 | .... | .... |
| *Port Chester* | 7,440 | 18 | ..... | 9 | 50 0 | 3 | 445 | .... | .... |
| *Ossining* | 7,939 | 9 | ..... | 2 | 22.2 | 2 | 110 | .... | .... |
| NEW ROCHELLE | 14,720 | 20 | ..... | 5 | 25.0 | 3 | 250 | .... | 1 |
| *Peekskill* | 10,358 | 19 | ..... | 11 | 65.0 | 2 | 420 | .... | .... |
| *White Plains* | 7,900 | 12 | ..... | 6 | 50.0 | 2 | 333 | .... | .... |
| Rest of district | 85,000 | 190 | 27.0 | 57 | 30.0 | 41 | 210 | 2 | 1 |
| HUDSON VALLEY DISTRICT Totals | 690,143 | 900 | 16 0 | 229 | 25.5 | 175 | 180 | 1 | 22 |
| ALBANY | 94,151 | 138 | 17.8 | 28 | 20.3 | 21 | 137 | .... | 4 |
| COHOES | 24,000 | 38 | 19.2 | 10 | 26 3 | 5 | 132 | .... | .... |
| TROY | 75,057 | 97 | 15.7 | 21 | 21.6 | 14 | 112 | .... | 2 |
| WATERVLIET | 14,321 | 15 | ..... | 3 | 20.0 | 4 | 66 | .... | .... |
| *Green Island* | 4,770 | 6 | ..... | 1 | 16.7 | 1 | 166 | .... | 1 |
| *Hoosick Falls* | 5,671 | 2 | ..... | 0 | ..... | 0 | 500 | .... | 1 |
| RENSSELAER | 7,466 | 12 | ..... | 4 | 33.3 | 2 | 250 | .... | .... |
| Coxsackie | 4,102 | 5 | ..... | 0 | ..... | 0 | ..... | 1 | .... |
| *Catskill* | 5,488 | 5 | ..... | 2 | 40.0 | 1 | 400 | .... | .... |
| HUDSON | 9,528 | 13 | ..... | 3 | 23.0 | 3 | 77 | .... | .... |
| KINGSTON | 24,535 | 37 | 18.2 | 8 | 21 6 | 9 | 108 | .... | 1 |
| *Ellenville* | 3,000 | 3 | ..... | 1 | 33.3 | 1 | 333 | .... | .... |
| Marbletown | 3,511 | 4 | ..... | 0 | ..... | 0 | 500 | .... | 2 |
| Rosendale | 6,278 | 9 | ..... | 3 | 33.3 | 4 | 222 | .... | .... |
| Esopus | 4,907 | 7 | ..... | 1 | 14.2 | 1 | * 285 | .... | .... |
| *Saugerties* | 3,700 | 3 | ..... | 1 | 33.3 | 2 | ..... | .... | .... |
| POUGHKEEPSIE | 24,029 | 25 | 13.0 | 5 | 20.0 | 4 | 80 | .... | .... |
| Fishkill | 13,0 | 16 | ..... | 4 | 25.0 | 5 | 65 | .... | .... |
| *Wappingers Falls* | 3,504 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| NEWBURGH | 25,000 | 44 | 21.4 | 20 | 45.5 | 1 | 364 | .... | 4 |
| *Port Jervis* | 9,385 | 10 | ..... | 3 | 30.0 | 1 | 200 | .... | .... |
| MIDDLETOWN | 14,522 | 18 | ..... | 5 | 27.3 | 3 | 222 | .... | .... |
| Warwick | 6,403 | 12 | ..... | 7 | 58.3 | 0 | 587 | .... | .... |
| *Goshen* | 4,564 | 6 | ..... | 2 | 33.3 | 0 | 333 | .... | .... |

## YORK STATE DEPARTMENT OF HEALTH

***districts, cities, villages and towns during September*, 1901**

**villages in *italic* and towns in roman type]**

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 45 | 10 | 22 | 13 | 12 | 28 | 109 | 1314 | 394 | 668 | 31 | 284 | 463 | 413 | 456 | 194 | 316 | 116 | 1,164 |
| 40 | 10 | 22 | 13 | 12 | 27 | 105 | 1220 | 373 | 617 | 27 | 241 | 426 | 365 | 391 | 180 | 283 | 93 | 1,106 |
| 15 | ---- | 7 | 8 | 11 | 12 | 49 | 607 | 177 | 322 | 8 | 145 | 245 | 211 | 185 | 104 | 184 | 45 | 623 |
| 10 | 9 | 1 | ---- | ---- | 1 | 10 | 52 | 14 | 76 | 3 | 7 | 26 | 17 | 33 | 13 | 14 | 11 | 66 |
| 10 | 1 | 13 | ---- | 1 | 12 | 38 | 417 | 161 | 186 | 15 | 78 | 127 | 111 | 135 | 54 | 67 | 27 | 358 |
| 3 | ---- | 1 | ---- | ---- | 2 | 5 | 58 | 15 | 26 | ---- | 5 | 21 | 13 | 29 | 3 | 12 | 6 | 47 |
| 2 | ---- | ---- | ---- | ---- | ---- | 3 | 26 | 6 | 7 | 1 | 6 | 7 | 13 | 9 | 6 | 6 | 4 | 12 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 3 | ---- | ---- | ---- | 3 | 3 | 1 | ---- | 2 | ---- | 1 | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 6 | ---- | 2 | ---- | 4 | 2 | 5 | 3 | ---- | ---- | ---- | 4 |
| 1 | ---- | ---- | ---- | ---- | ---- | ---- | 2 | 2 | 4 | ---- | 2 | 1 | 1 | ---- | ---- | 4 | 2 | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 2 | 1 | 2 | 3 | ---- | 1 | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | 1 | ---- | ---- | 1 | ---- | 4 | ---- | 1 | 1 | 4 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 4 | ---- | 4 | 1 | 1 | 2 | ---- | 3 | 1 | 1 | 1 | 3 |
| 1 | ---- | ---- | ---- | ---- | ---- | 1 | 10 | 6 | 9 | 1 | 4 | 3 | 7 | 14 | ---- | 6 | ---- | 11 |
| 1 | ---- | ---- | ---- | ---- | ---- | 1 | 2 | ---- | 3 | 2 | 2 | 5 | 2 | 3 | 1 | 2 | 1 | 5 |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | 8 | 1 | 2 | 1 | 2 | 3 | 1 | 4 | ---- | 3 | 1 | 6 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 8 | 1 | 1 | ---- | 1 | 2 | 1 | 1 | ---- | ---- | 1 | 2 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | 2 | 1 | ---- | 1 | 2 | ---- | 1 | ---- | 1 | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | 3 | ---- | ---- | ---- | 4 | 1 | 3 | ---- | 2 | 1 | 1 | 3 |
| 1 | ---- | ---- | ---- | ---- | 1 | ---- | 6 | ---- | ---- | ---- | 1 | 1 | ---- | 2 | ---- | 4 | ---- | 3 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 4 | 1 | 1 | ---- | 1 | ---- | ---- | 2 | 1 | ---- | ---- | 2 |
| 1 | ---- | ---- | ---- | ---- | ---- | ---- | 36 | 0 | 22 | 1 | 16 | 11 | 23 | 26 | 6 | 10 | 12 | 13 |
| 1 | 1 | 2 | ---- | ---- | 1 | 23 | 112 | 40 | 97 | 3 | 86 | 56 | 93 | 113 | 40 | 50 | 53 | 106 |
| ---- | ---- | ---- | ---- | ---- | 1 | 3 | 11 | 5 | 15 | ---- | 12 | 14 | 18 | 20 | 9 | 3 | 8 | 15 |
| ---- | ---- | ---- | ---- | ---- | ---- | 2 | 3 | 3 | 5 | ---- | 6 | 3 | 2 | 2 | 1 | 3 | 3 | 5 |
| ---- | ---- | 2 | ---- | ---- | ---- | ---- | 7 | 9 | 17 | 1 | 9 | 8 | 6 | 12 | 5 | 4 | 3 | 12 |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | ---- | 4 | ---- | 1 | 3 | 1 | ---- | ---- | 1 | 1 | 3 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 2 | ---- | ---- | ---- | 1 | 1 | ---- | ---- | ---- | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 2 | 1 | ---- | ---- | 1 | 1 | 1 | 2 | ---- | 1 | 1 | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 3 | 1 | ---- | 1 | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | 1 | ---- | ---- | ---- | ---- | ---- | 1 | ---- | ---- | 2 | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | 1 | ---- | 3 | 1 | 1 | 2 | ---- | ---- | ---- | 4 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 3 | 1 | 3 | ---- | 6 | 2 | 6 | 6 | 2 | 2 | ---- | 5 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | ---- | ---- | 1 | ---- | ---- | ---- | ---- | 1 | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | 1 | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | 2 | ---- | ---- | ---- | 1 | ---- | ---- | 1 | ---- | ---- | ---- | 3 | 2 |
| ---- | ---- | ---- | ---- | ---- | ---- | 2 | ---- | ---- | 1 | ---- | 1 | ---- | ---- | 1 | ---- | ---- | 1 | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 2 | ---- | ---- | 1 | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | 1 | 1 | 4 | ---- | 5 | ---- | 3 | 4 | 1 | 1 | 1 | 3 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | 3 | ---- | 1 | 1 | 2 | 4 | ---- | 2 | 1 | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | 1 | ---- | ---- | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | 2 | 10 | 2 | 4 | ---- | ---- | 1 | 4 | 7 | 1 | 1 | 2 | 6 |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | 1 | ---- | 1 | ---- | 1 | ---- | 2 | 2 | 2 | ---- | ---- | ---- |
| 1 | ---- | ---- | ---- | ---- | ---- | 1 | 2 | ---- | 4 | ---- | 3 | 1 | 1 | 3 | ---- | 1 | ---- | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | 2 | 5 | ---- | ---- | ---- | 2 | ---- | ---- | 1 | ---- | ---- | ---- | 2 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 2 | ---- | 1 | ---- | 1 | ---- | ---- | ---- | ---- | ---- | 1 | 1 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| HUDSON VALLEY DIST.—(*Con.*) | | | | | | | | | |
| Montgomery | 5,939 | 6 | ..... | 2 | 33.3 | 4 | 500 | .... | .... |
| Haverstraw | 9,874 | 13 | ..... | 8 | 61.5 | 0 | 307 | .... | .... |
| *Nyack* | 4,275 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Ramapo | 7,502 | 9 | ..... | 1 | 11.1 | 2 | 111 | .... | .... |
| Rest of district | 271,800 | 344 | 14.5 | 86 | 25.0 | 87 | 197 | .... | 7 |
| ADIRONDACK AND NORTH'RN DISTRICT | | | | | | | | | |
| Totals | 394,772 | 426 | 13.5 | 111 | 26.0 | 117 | 200 | 2 | 6 |
| WATERTOWN | 21,700 | 32 | 18.0 | 11 | 34.3 | 6 | 185 | .... | 1 |
| Ellisburgh | 3,888 | 5 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Cape Vincent | 2,882 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| Clayton | 4,313 | 4 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| OGDENSBURGH | 12,633 | 29 | ..... | 4 | 13.5 | 4 | 300 | .... | .... |
| Gouverneur | 6,000 | 9 | ..... | 1 | 11.1 | 4 | ..... | .... | .... |
| *Potsdam* | 3,843 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Canton | 6,387 | 6 | ..... | 1 | 16.7 | 3 | 167 | .... | .... |
| *Malone* | 5,935 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Plattsburgh* | 8,434 | 17 | ..... | 10 | 60.0 | 0 | 400 | 1 | .... |
| *Glens Falls* | 12,613 | 18 | ..... | 6 | 33.3 | 0 | 350 | .... | .... |
| *Whitehall* | 4,377 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Fort Edward | 5,216 | 7 | ..... | 2 | 28.5 | 1 | 570 | .... | .... |
| *Sandy Hill* | 4,473 | 4 | ..... | 2 | 50.0 | 0 | 500 | .... | .... |
| Granville | 5,217 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| Greenwich | 4,172 | 13 | ..... | 6 | 48.1 | 3 | 382 | .... | 1 |
| Lowville | 3,746 | 6 | ..... | 1 | 16.7 | 1 | 167 | .... | .... |
| Rest or district | 278,943 | 267 | 12.0 | 65 | 24.5 | 87 | 168 | 1 | 4 |
| MOHAWK VALLEY DISTRICT | | | | | | | | | |
| Totals | 408,973 | 510 | 15 3 | 122 | 24 0 | 112 | 178 | 2 | 14 |
| SCHENECTADY | 31,682 | 47 | 18.0 | 16 | 34.8 | 2 | 172 | .... | 1 |
| Cobleskill | 3,973 | 3 | ..... | 1 | 33.3 | 0 | ..... | .... | .... |
| AMSTERDAM | 20,929 | 23 | 13.4 | 12 | 23.0 | 1 | 88 | .... | .... |
| *Fort Plain* | 2,444 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| JOHNSTOWN | 10,130 | 11 | ..... | 4 | 36.4 | 1 | 273 | .... | .... |
| GLOVERSVILLE | 18,349 | 23 | ..... | 8 | 33.5 | 3 | 260 | .... | .... |
| LITTLE FALLS | 10,381 | 10 | ..... | 3 | 30.0 | 1 | 100 | 1 | .... |
| *Herkimer* | 5,555 | 7 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Ilion* | 5,138 | 6 | ..... | 4 | 66.6 | 1 | 333 | .... | .... |
| UTICA | 56,383 | 85 | 18.3 | 21 | 24.7 | 20 | 130 | .... | 3 |
| Whitestown | 6,235 | 7 | ..... | 4 | 57.0 | 1 | 128 | .... | .... |
| ROME | 15,343 | 14 | ..... | 3 | 21.4 | 1 | 285 | 1 | .... |
| Boonville | 3,332 | 6 | ..... | 2 | 33.3 | 1 | ..... | .... | .... |
| Camden | 3,745 | 6 | ..... | 2 | 33.3 | 2 | 167 | .... | .... |
| Waterford | 6,157 | 6 | ..... | 1 | 16 7 | 2 | ..... | .... | .... |
| *Mechanicville* | 4,695 | 8 | ..... | 3 | 37.5 | 1 | 125 | .... | .... |
| *Ballston Spa* | 3,923 | 8 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Saratoga Springs* | 12,409 | 30 | ..... | 7 | 23.3 | 4 | 233 | .... | 3 |
| Rest of district | 188,170 | 210 | 13 5 | 51 | 24.3 | 68 | 250 | .... | 7 |
| SOUTHERN TIER DISTRICT | | | | | | | | | |
| Totals | 429,434 | 468 | 13.5 | 92 | 20.0 | 169 | 150 | .... | 19 |
| BINGHAMTON | 39,647 | 49 | 15 0 | 6 | 12.7 | 8 | 165 | .... | 3 |
| *Owego* | 5,039 | 11 | ..... | 3 | 27.3 | 2 | 90 | .... | .... |
| *Candor* | 3,330 | 5 | ..... | 1 | 20.0 | 3 | 200 | .... | 1 |
| *Waverly* | 4,465 | 5 | ..... | 2 | 40.0 | 1 | ..... | .... | .... |
| *ELMIRA* | 35,672 | 44 | 15.0 | 8 | 18.0 | 11 | 136 | .... | 2 |

FOR SEPTEMBER—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| | | | | | | | 3 | | | | 1 | | | | | | 1 | 1 |
| | | | | | | | 4 | | 1 | | 2 | 1 | | 1 | | 1 | | 3 |
| | | | | | | | | | 1 | | | | | | | | | |
| | | | | | | | 1 | 1 | 1 | | | | | 1 | | 3 | 1 | 1 |
| | 1 | | | | | 5 | 53 | 17 | 29 | 1 | 30 | 19 | 40 | 39 | 19 | 22 | 25 | 37 |
| | | | | | | 8 | 70 | 21 | 42 | 3 | 27 | 27 | 39 | 57 | 24 | 22 | 30 | 48 |
| | | | | | | | 4 | 1 | 2 | | 1 | 3 | 1 | 3 | 2 | 5 | 2 | 7 |
| | | | | | | | | | 1 | | | | 1 | | 1 | | 2 | |
| | | | | | | | | | 1 | | 1 | | | 1 | | | 1 | |
| | | | | | | | | | | | | 1 | | | | 1 | 2 | |
| | | | | | | | 9 | | 3 | | 3 | 1 | 2 | 6 | 1 | | 1 | 1 |
| | | | | | | | | | 2 | 1 | | | 1 | 1 | 2 | | 1 | 1 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | 1 | | | | | 1 | 2 | | | 1 | 1 | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | 1 | 5 | | 1 | 1 | | | 2 | 2 | 1 | | | 3 |
| | | | | | | | 7 | | 2 | | 1 | 1 | 1 | 3 | | 1 | | 2 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | 1 | 3 | 1 | | | | | | | | 2 | | |
| | | | | | | | 2 | | 1 | | 1 | | | | | | | |
| | | | | | | | | | | | | | 1 | 4 | | | | |
| | | | | | | | 4 | 1 | 1 | | 3 | | 1 | 2 | | | | |
| | | | | | | 1 | | | 2 | 1 | | | | | 1 | | | 1 |
| | | | | | | 5 | 35 | 16 | 26 | | 17 | 20 | 27 | 35 | 16 | 12 | 20 | 33 |
| | | | 1 | | 3 | 15 | 56 | 25 | 34 | 2 | 46 | 35 | 48 | 60 | 23 | 40 | 31 | 75 |
| | | | | | | 4 | 3 | 3 | 4 | | 4 | 3 | 4 | 4 | 2 | 5 | | 10 |
| | | | | | | | | | | | | | 1 | 1 | | 1 | | |
| | | | | | | | 2 | 1 | 3 | | 2 | | 2 | 3 | | 2 | | 8 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | 3 | | 1 | 1 | 1 | | 2 | | 1 | 1 | | 1 |
| | | | | | | | 6 | 3 | 1 | | | 1 | 2 | 5 | | | | 5 |
| | | | | | | | | 1 | | | 1 | | | 2 | 3 | 2 | | |
| | | | | | | | | 1 | | | 1 | | 1 | 2 | | 1 | | 1 |
| | | | | | 1 | | 1 | | 1 | | 2 | | | | | 1 | | |
| | | | | | 2 | 3 | 3 | 9 | 6 | | 10 | 4 | 8 | 8 | 3 | 7 | 4 | 15 |
| | | | | | | | 1 | | | | | | | 2 | | 1 | 1 | 2 |
| | | | | | | | 3 | | 1 | | 1 | 1 | 2 | 4 | | 1 | | |
| | | | | | | | | | | | 2 | | | 2 | | 2 | | |
| | | | | | | | 1 | | | | 1 | 1 | | 1 | 1 | | 1 | |
| | | | | | | | | 1 | | | 3 | | | | | | 2 | |
| | | | | | | | 1 | | 1 | | | | 2 | 1 | | | 1 | 2 |
| | | | | | | | | | 1 | | | 4 | 1 | | | | | 2 |
| | | | 1 | | | 8 | 28 | 1 | 3 | | 2 | 1 | 3 | 3 | | 3 | | 7 |
| | | | | | | | | 5 | 12 | 1 | 16 | 20 | 20 | 22 | 13 | 13 | 22 | 22 |
| | | 1 | | 1 | 13 | 4 | 33 | 20 | 38 | 4 | 52 | 28 | 42 | 58 | 24 | 40 | 50 | 41 |
| | | | | | 1 | 2 | 2 | 5 | 6 | 1 | 9 | 1 | 4 | 9 | 1 | 2 | 2 | 1 |
| | | | | | | | 1 | | 3 | | | | 1 | 1 | 1 | | 2 | 2 |
| | | | | | | | | | | | | | | 1 | | | 2 | 1 |
| | | | | | | | | | | | | | 3 | | | 1 | | 1 |
| | | 1 | | | | | 3 | 1 | 7 | | 8 | 3 | 4 | 3 | 1 | 5 | 3 | 3 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| HORNELLSVILLE | 12,000 | 21 | ..... | 7 | 33.3 | 2 | 255 | .... | .... |
| *Bath* | 5,000 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| CORNING | 11,061 | 15 | ..... | 3 | 20.0 | 2 | 200 | .... | .... |
| Wellsville | 5,000 | 9 | ..... | 2 | 22.2 | 4 | 333 | .... | 2 |
| OLEAN | 9,462 | 12 | ..... | 1 | 8.3 | 4 | 167 | .... | 1 |
| *Salamanca* | 4,251 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| DUNKIRK | 11,616 | 13 | ..... | 4 | 30.0 | 3 | ..... | .... | .... |
| JAMESTOWN | 22,892 | 26 | 14.0 | 5 | 19.3 | 5 | 193 | .... | 1 |
| *Westfield* | 2,430 | 7 | ..... | 2 | 28.5 | 3 | ..... | .... | .... |
| *Fredonia* | 4,125 | 6 | ..... | 1 | 16.7 | 2 | 285 | .... | .... |
| Rest of district | 248,500 | 240 | 12.0 | 47 | 20 0 | 117 | ..... | .... | 9 |
| EAST CENTRAL DISTRICT Totals | 401,082 | 409 | 12.5 | 82 | 20.0 | 101 | 145 | .... | 13 |
| SYRACUSE | 108,374 | 111 | 13.5 | 35 | 31.5 | 16 | 145 | .... | 3 |
| *Baldwinsville* | 3,000 | 7 | ..... | 0 | ..... | 1 | 142 | .... | .... |
| De Witt | 5,435 | 6 | ..... | 2 | 33.3 | 3 | 165 | .... | .... |
| CORTLAND | 9,014 | 9 | ..... | 2 | 22.2 | 3 | 111 | .... | 1 |
| *Homer* | 2,381 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Oneida* | 7,942 | 16 | ..... | 2 | 12.5 | 4 | 125 | .... | 1 |
| Hamilton | 3,744 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Cazenovia | 3,830 | 7 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Brookfield | 2,726 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Norwich* | 5,766 | 6 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Oneonta* | 7,147 | 6 | ..... | 1 | 16.7 | 2 | 167 | .... | .... |
| Worcester | 2,409 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Cooperstown* | 2,368 | 5 | ..... | 1 | 20.0 | 0 | ..... | .... | .... |
| Walton | 4,869 | 5 | ..... | 0 | ..... | 0 | ..... | .... | 2 |
| Delhi | 3,243 | 7 | ..... | 0 | ..... | 2 | 128 | .... | .... |
| Liberty | 4,568 | 11 | ..... | 3 | 27.3 | 1 | 90 | .... | .... |
| Rest of district | 225,844 | 207 | 12 0 | 36 | 17.5 | 62 | 160 | .... | 6 |
| WEST CENTRAL DISTRICT Totals | 316,600 | 371 | 14.2 | 73 | 20.0 | 102 | 165 | .... | 8 |
| AUBURN | 30,345 | 35 | 13.4 | 7 | 20 0 | 12 | 85 | .... | .... |
| ITHACA | 13,136 | 12 | ..... | 1 | 8.3 | 6 | 167 | .... | .... |
| Hector | 4,137 | 2 | ..... | 1 | 50.0 | 0 | 500 | .... | .... |
| *Waterloo* | 4,256 | 4 | ..... | 0 | ..... | 1 | 250 | .... | .... |
| *Seneca Falls* | 6,519 | 8 | ..... | 1 | 12.5 | 0 | ..... | .... | .... |
| GENEVA | 10,433 | 21 | ..... | 6 | 30.0 | 3 | 400 | .... | 3 |
| *Canandaigua* | 6,151 | 12 | ..... | 1 | 8.3 | 3 | ..... | .... | .... |
| Manchester | 4,733 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Phelps | 4,788 | 9 | ..... | 1 | 11.1 | 4 | 111 | .... | .... |
| *Penn Yan* | 4,650 | 7 | ..... | 3 | 42.8 | 2 | ..... | .... | .... |
| *Batavia* | 9,180 | 12 | ..... | 1 | 8 5 | 3 | 166 | .... | 1 |
| *Dansville* | 3,633 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Le Roy* | 3,144 | 8 | ..... | 0 | ..... | 2 | 125 | .... | 1 |
| Warsaw | 4,341 | 8 | ..... | 2 | 25.0 | 2 | 250 | .... | .... |
| Rest of district | 206,500 | 230 | 13.5 | 49 | 21.3 | 63 | 173 | .... | 3 |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 879,022 | 1,012 | 14.0 | 312 | 30.0 | 182 | 200 | 3 | 27 |
| BUFFALO | 352,387 | 437 | 15.0 | 152 | 34.8 | 51 | 215 | 3 | 13 |
| *TONAWANDA* | 7,421 | 8 | ..... | 3 | 37.5 | 2 | 375 | .... | .... |
| *Amherst* | 4,223 | 4 | ..... | 2 | 50 0 | 1 | 250 | .... | .... |

FOR SEPTEMBER—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| | | | | | | | | | | | | | 1 | | | | 1 | |
| | | | | | 4 | | 1 | 2 | | | 1 | 3 | | 1 | 1 | 2 | 2 | 4 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | 3 | | 1 | | 2 | | | 4 | 1 | 3 | | 1 |
| | | | | | | | 1 | | | | | 1 | | 1 | | | 2 | 3 |
| | | | | | | | 1 | | | | 1 | | 3 | 1 | | 2 | 2 | 1 |
| | | | | | | | | | | | 1 | 1 | | | | 1 | | |
| | | | | | | | | | | | 2 | 2 | 1 | 1 | | 2 | 2 | 3 |
| | | | | | | 2 | 2 | 1 | 4 | | 1 | 4 | 3 | 4 | 1 | 2 | | |
| | | | | | | | 2 | | 1 | | 1 | 1 | 1 | | | 1 | | |
| | | | | | | | | | | | 1 | | | 1 | | 1 | | 3 |
| | | | | 1 | 8 | | 17 | 11 | 16 | 3 | 25 | 12 | 21 | 31 | 18 | 18 | 32 | 8 |
| | | 2 | | | 3 | 3 | 39 | 21 | 42 | 3 | 43 | 26 | 44 | 41 | 26 | 25 | 32 | 46 |
| | | 1 | | | 2 | 2 | 8 | 8 | 9 | 1 | 13 | 4 | 15 | 7 | 5 | 8 | 4 | 21 |
| | | | | | | | 1 | | 3 | 1 | | 1 | 1 | | | | | |
| | | | | | | | 1 | | 1 | | 2 | | | 1 | | | 1 | |
| | | | | | | | | 1 | | | 4 | | 1 | 1 | | | 1 | |
| | | | | | | | | | | | 1 | | | | | | | |
| | | | | | | | 1 | | 2 | | | | 1 | 3 | 1 | 4 | 2 | 1 |
| | | | | | | | | | 1 | | 1 | | | 1 | | | | |
| | | | | | | | | | | | | 1 | 2 | 1 | 2 | | | 1 |
| | | | | | | | | | | | | 1 | 1 | | | | | |
| | | | | | | | | | 2 | | | | | 2 | 1 | 1 | | |
| | | | | | | | 1 | | | | | 1 | | 2 | | | 2 | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 3 | | | 2 |
| | | | | | | | | | 1 | | | | | | 1 | 1 | | |
| | | | | | | | 1 | | 1 | | | | 2 | 2 | 1 | | | |
| | | | | | | | 2 | 1 | 5 | | | | 1 | 1 | | | 1 | |
| | | 1 | | | 1 | 1 | 24 | 11 | 17 | 1 | 22 | 18 | 20 | 20 | 12 | 11 | 21 | 21 |
| 1 | | 1 | | 1 | 3 | 2 | 45 | 10 | 26 | | 38 | 17 | 47 | 45 | 24 | 25 | 32 | 46 |
| | | | | | | | 3 | | 1 | | 10 | 3 | 2 | 4 | | 3 | 1 | 8 |
| | | | | | | | 2 | | | | | | 4 | 3 | 1 | 1 | 1 | |
| | | | | | | | 1 | | | | | | | 1 | | | | |
| | | | | | | | 1 | | | | | | | | 1 | 1 | | 1 |
| | | | | | | | | | 2 | | 2 | | | 1 | 1 | 2 | | |
| | | | | | 1 | | 4 | | | | 1 | 2 | 1 | 3 | 3 | | 1 | 2 |
| | | | | | | | | 2 | | | | 1 | 1 | 1 | | 1 | 1 | 5 |
| | | | | | | | | | | | | | 1 | 1 | | | | 1 |
| | | | | | | | 1 | | | | 1 | 2 | 3 | | | | 2 | |
| | | | | | | | | | 2 | | | | | | | | 2 | 3 |
| | | | | | | | 1 | 1 | 2 | | | 1 | | 2 | 2 | 1 | | 1 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | 4 | | 1 | | 1 | 1 |
| | | | | | | | 2 | | | | | | | 1 | 1 | 3 | 1 | |
| 1 | | 1 | | 1 | 2 | 2 | 30 | 7 | 19 | | 24 | 8 | 31 | 28 | 14 | 13 | 22 | 24 |
| | | 4 | | | 9 | 19 | 139 | 51 | 74 | 9 | 97 | 53 | 89 | 128 | 62 | 59 | 58 | 131 |
| | | 3 | | | 6 | 8 | 61 | 32 | 29 | 4 | 26 | 20 | 36 | 53 | 31 | 30 | 26 | 56 |
| | | | | | | | 2 | | | | | | 1 | 1 | 2 | | 1 | |
| | | 1 | | | | | 1 | | | | 2 | | | | | | | 1 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*) | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 11 | ..... | 3 | 27.3 | 1 | ..... | .... | .... |
| LOCKPORT | 16,581 | 16 | ..... | 6 | 37.5 | 6 | 315 | .... | 1 |
| NIAGARA FALLS | 19,457 | 25 | 15.6 | 13 | 52.0 | 3 | 240 | .... | 1 |
| *Medina* | 4,716 | 4 | ..... | 1 | 25.0 | 1 | 750 | .... | .... |
| *Albion* | 4,477 | 8 | ..... | 2 | 25.0 | 0 | 500 | .... | 1 |
| *Brockport* | 3,400 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| ROCHESTER | 162,608 | 179 | 13.3 | 39 | 22.2 | 33 | 135 | .... | 3 |
| Palmyra | 3,758 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Newark* | 4,578 | 6 | ..... | 3 | 50 0 | 1 | 333 | .... | .... |
| Lyons | 5,824 | 8 | ..... | 2 | 25.0 | 3 | 375 | .... | .... |
| *Clyde* | 2,507 | 7 | ..... | 2 | 28.5 | 1 | 142 | .... | 1 |
| OSWEGO | 22,200 | 31 | 18 0 | 12 | 39.5 | 5 | 230 | .... | .... |
| *Fulton* | 5,281 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| Richland | 3,535 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Rest of district | 247,000 | 260 | 12 8 | 72 | 27.7 | 71 | 190 | .... | 7 |
| Totals for the state | 7,268,000 | 10,269 | 17.2 | 3,668 | 35.7 | 1,450 | 283 | 25 | 210 |
| Average for past 5 years | ..... | 9,995 | 17.8 | 3,575 | 35.7 | ..... | 205 | 48 | 232 |

FOR SEPTEMBER—(*Concluded*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 2 | 2 | ---- | 3 | 2 | 1 | ---- | ---- | ---- | ---- | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | 3 | ---- | ---- | ---- | 1 | ---- | 2 | 1 | ---- | 1 | 1 | 5 |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | 4 | 1 | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 6 |
| ---- | ---- | ---- | ---- | ---- | ---- | 1 | 2 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | 1 | ---- | 2 | 1 | 1 | ---- | ---- | ---- | ---- | ---- | 2 | ---- | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | 1 | 1 | ---- | ---- | ---- | ---- | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | 1 | ---- | 19 | 4 | 20 | 3 | 22 | 6 | 19 | 25 | 14 | 8 | 10 | 25 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | ---- | ---- | 2 | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 2 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 3 | ---- | 1 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 3 | ---- | ---- | ---- | 1 | ---- | 1 | 2 | ---- | ---- | 1 | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 | 1 | ---- | 1 | ---- | 3 | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | 7 | 1 | 1 | ---- | 5 | 4 | 1 | 6 | 2 | ---- | ---- | 4 |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 2 | ---- |
| ---- | ---- | ---- | ---- | ---- | 1 | 8 | 33 | 10 | 19 | 1 | 32 | 18 | 25 | 38 | 10 | 10 | 16 | 32 |
| 47 | 11 | 32 | 14 | 14 | 60 | 183 | 1808 | 582 | 1,021 | 58 | 673 | 705 | 815 | 958 | 417 | 577 | 402 | 1,654 |
| 49 | 0 | 23 | 25 | 10 | 90 | 205 | 1350 | 756 | 1,004 | 65 | 1,033 | 636 | 785 | 959 | 356 | 653 | 413 | 1,307 |

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS,

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| MARITIME DISTRICT Totals | 3,852,922 | 5,621 | 17.0 | 1,872 | 33.5 | 534 | 166 | 14 | 115 |
| CITY OF NEW YORK Totals | 3,526,517 | 5,189 | 17.2 | 1,750 | 33.7 | 454 | 170 | 13 | 109 |
| BOROUGH OF MANHATTAN | 1,873,562 | 2,830 | 17.8 | 973 | 34.3 | 220 | 150 | 8 | 58 |
| BOROUGH OF THE BRONX | 222,124 | 373 | 20.0 | 84 | 22.5 | 27 | 132 | 1 | 6 |
| BOROUGH OF BROOKLYN | 1,209,064 | 1,650 | 16.0 | 584 | 35.4 | 156 | 207 | 4 | 38 |
| BOROUGH OF QUEENS | 162,834 | 233 | 17.0 | 81 | 34.7 | 30 | 210 | .... | 5 |
| BOROUGH OF RICHMOND | 68,933 | 103 | 17.5 | 28 | 27.8 | 21 | 150 | .... | 2 |
| Oyster Bay | 16,334 | 36 | ..... | 14 | 38.8 | 6 | 111 | .... | .... |
| Hempstead | 27,066 | 38 | 16.2 | 14 | 37.8 | 11 | 108 | .... | .... |
| North Hempstead | 12,048 | 15 | ..... | 6 | 40.0 | 4 | 200 | .... | .... |
| Southold | 8,301 | 10 | ..... | 2 | 20.0 | 5 | 100 | .... | .... |
| *Sag Harbor* | 2,000 | 1 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Huntington | 9,483 | 13 | ..... | 3 | 23.0 | 3 | ..... | .... | .... |
| Brookhaven | 14,592 | 7 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| YONKERS | 47,931 | 64 | 15.7 | 17 | 26.5 | 7 | 110 | 1 | .... |
| Greenburgh | 15,564 | 16 | ..... | 2 | 12.5 | 0 | 125 | .... | .... |
| MOUNT VERNON | 20,346 | 32 | 18.0 | 11 | 34.4 | 9 | 156 | .... | 1 |
| *Port Chester* | 7,440 | 10 | ..... | 5 | 50.0 | 1 | 500 | .... | 1 |
| *Ossining* | 7,939 | 11 | ..... | 1 | 9.0 | 5 | ..... | .... | .... |
| NEW ROCHELLE | 14,720 | 22 | ..... | 9 | ..... | 4 | ..... | .... | 1 |
| *Peekskill* | 10,358 | 16 | ..... | 4 | 25.0 | 3 | 62 | .... | .... |
| *White Plains* | 7,900 | 8 | ..... | 1 | 12.5 | 1 | 125 | .... | 1 |
| Rest of district | 85,000 | 133 | 17.7 | 32 | 25.2 | 20 | 118 | .... | 2 |
| HUDSON VALLEY DISTRICT Totals | 690,143 | 863 | 14.8 | 161 | 18.7 | 199 | 128 | 1 | 20 |
| ALBANY | 94,151 | 126 | 15.7 | 15 | 12.0 | 26 | 55 | .... | .... |
| COHOES | 24,000 | 38 | 18.5 | 7 | 18.4 | 2 | 52 | .... | .... |
| TROY | 75,057 | 101 | 15.7 | 24 | 24.0 | 13 | 110 | .... | 5 |
| WATERVLIET | 14,321 | 13 | ..... | 3 | 23.0 | 1 | 73 | .... | .... |
| *Green Island* | 4,770 | 3 | ..... | 2 | ..... | 0 | ..... | .... | .... |
| *Hoosic Falls* | 5,671 | 9 | ..... | 1 | 11.1 | 3 | ..... | .... | .... |
| RENSSELAER | 7,466 | 5 | ..... | 2 | 40.0 | 0 | ..... | .... | .... |
| Coxsackie | 4,102 | 7 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Catskill* | 5,486 | 8 | ..... | 1 | 12.5 | 4 | 125 | .... | .... |
| HUDSON | 9,528 | 18 | ..... | 4 | 22.2 | 2 | 166 | 1 | .... |
| KINGSTON | 24,535 | 33 | 15.4 | 4 | 12.1 | 3 | 30 | .... | .... |
| *Ellenville* | 3,000 | 5 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Marbletown | 3,511 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Rosendale | 6,278 | 7 | ..... | 2 | 28.5 | 1 | 143 | .... | .... |
| Esopus | 4,907 | 6 | ..... | 0 | ..... | 2 | 333 | .... | .... |
| *Saugerties* | 3,700 | 6 | ..... | 1 | ..... | 2 | ..... | .... | .... |
| POUGHKEEPSIE | 24,029 | 31 | 15.2 | 9 | 32.0 | 6 | 190 | .... | 1 |
| Fishkill | 13,016 | 13 | ..... | 2 | 15.4 | 4 | 77 | .... | .... |
| *Wappingers Falls* | 3,504 | 4 | ..... | 1 | 25.0 | 0 | 250 | .... | 1 |
| NEWBURGH | 25,000 | 36 | 17.0 | 10 | 27.8 | 7 | 139 | .... | .... |
| *Port Jervis* | 9,385 | 10 | ..... | 3 | 30.0 | 3 | 200 | .... | 1 |
| MIDDLETOWN | 14,522 | 10 | ..... | 1 | 10.0 | 4 | ..... | .... | .... |
| Warwick | 6,403 | 5 | ..... | 1 | 20.0 | 3 | 200 | .... | .... |
| *Goshen* | 4,564 | 3 | ..... | 1 | ..... | 0 | ..... | .... | .... |

## YORK STATE DEPARTMENT OF HEALTH

***districts, cities, villages and towns during October*, 1901**

**villages in *italic* and towns in roman type]**

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 29 | 11 | 31 | 19 | 12 | 28 | 152 | 520 | 573 | 700 | 42 | 271 | 520 | 443 | 435 | 218 | 294 | 114 | 1,080 |
| 27 | 11 | 31 | 17 | 12 | 28 | 142 | 491 | 538 | 639 | 41 | 235 | 490 | 401 | 374 | 199 | 272 | 96 | 1,023 |
| 4 | 1 | 11 | 11 | 7 | 13 | 75 | 239 | 274 | 326 | 24 | 129 | 280 | 215 | 196 | 109 | 163 | 51 | 636 |
| 9 | 10 | 1 | .... | .... | .... | 4 | 18 | 41 | 102 | 4 | 10 | 31 | 18 | 27 | 16 | 20 | 8 | 47 |
| 6 | .... | 19 | 6 | 4 | 13 | 49 | 202 | 194 | 178 | 12 | 77 | 155 | 133 | 115 | 60 | 74 | 28 | 283 |
| 8 | .... | .... | .... | 1 | 2 | 9 | 24 | 19 | 20 | 1 | 13 | 17 | 19 | 22 | 11 | 14 | 6 | 42 |
| .... | .... | .... | .... | .... | .... | 5 | 8 | 10 | 13 | .... | 6 | 7 | 16 | 14 | 3 | 1 | 3 | 15 |
| .... | .... | .... | .... | .... | .... | .... | 4 | 2 | 5 | .... | 6 | 4 | 2 | 3 | 2 | 1 | 3 | 4 |
| .... | .... | .... | .... | .... | .... | .... | 4 | 4 | 2 | .... | 4 | 2 | 5 | 7 | 4 | .... | 1 | 5 |
| .... | .... | .... | 2 | .... | .... | .... | 1 | .... | 2 | .... | 1 | 1 | .... | 3 | 1 | .... | 2 | 2 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 1 | 1 | 1 | 2 | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 2 | .... | 3 | 2 | 3 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | 2 | 3 | .... | .... |
| .... | .... | .... | .... | .... | .... | 4 | 2 | 5 | 9 | .... | 5 | 7 | 8 | 8 | 3 | 3 | .... | 9 |
| .... | .... | .... | .... | .... | .... | 2 | .... | .... | 2 | .... | .... | .... | 2 | 5 | .... | 4 | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | 3 | 2 | 1 | .... | 3 | 4 | .... | 5 | .... | 2 | 3 | 7 |
| .... | .... | .... | .... | .... | .... | 2 | 2 | 1 | 1 | .... | .... | .... | 1 | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 1 | .... | 1 | 1 | 2 | 1 | 1 | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | 1 | .... | 4 | .... | .... | 1 | 1 | 2 | 4 | .... | 1 | .... | 7 |
| 1 | .... | .... | .... | .... | .... | .... | .... | 1 | 4 | .... | 2 | 2 | 3 | 2 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 3 | .... | 2 | 1 | .... |
| 1 | .... | .... | .... | .... | .... | .... | 12 | 10 | 32 | 1 | 10 | 7 | 13 | 14 | 3 | 4 | 6 | 18 |
| 8 | 3 | 2 | .... | 1 | 6 | 29 | 38 | 64 | 106 | 5 | 81 | 58 | 96 | 125 | 42 | 52 | 53 | 73 |
| .... | .... | .... | .... | 1 | .... | 6 | .... | 12 | 22 | .... | 6 | 12 | 13 | 19 | 8 | 11 | 10 | 6 |
| .... | .... | .... | .... | .... | 1 | 1 | .... | 4 | 12 | .... | 1 | 2 | 5 | 7 | 1 | 2 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | 2 | 4 | 8 | 13 | .... | 8 | 12 | 2 | 16 | 7 | 3 | 5 | 16 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | 3 | 1 | 1 | .... | .... | 3 | .... | 2 |
| .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | 1 | 1 | 2 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 2 | .... | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | 1 | .... | 1 | 1 | 2 | .... |
| .... | .... | .... | .... | .... | .... | 1 | .... | 2 | 1 | .... | 1 | 1 | 2 | .... | .... | .... | .... | .... |
| 1 | .... | .... | .... | .... | 1 | .... | .... | 1 | 4 | .... | 1 | 1 | 2 | 2 | .... | .... | .... | 4 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 4 | 6 | 2 | 2 | 2 | 6 | 6 | .... | 3 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | 1 | .... | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | .... | .... | .... | .... | .... |
| 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | 1 | 1 | .... | 2 | .... | .... |
| 1 | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | .... | .... | 2 | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | .... | 1 | .... | 2 | .... | 1 | .... | .... |
| .... | .... | 1 | .... | .... | .... | 4 | .... | .... | 3 | .... | 5 | 1 | 1 | 3 | 1 | 3 | 2 | 6 |
| 1 | .... | .... | .... | .... | .... | .... | .... | 2 | 3 | .... | 2 | 1 | 1 | .... | .... | .... | 3 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | .... | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 3 | 2 | 4 | 5 | .... | 2 | 1 | 3 | 5 | 3 | 4 | 3 | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | .... | 1 | 2 | .... | .... | .... | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 3 | .... | 1 | 1 | .... | 3 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | 1 | 1 | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| HUDSON VALLEY DIST.—(*Con.*) | | | | | | | | | |
| Montgomery | 5,939 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| Haverstraw | 9,874 | 4 | ..... | 4 | ..... | 0 | ..... | .... | .... |
| *Nyack* | 4,275 | 12 | ..... | 2 | 16.7 | 3 | 167 | .... | .... |
| Ramapo | 7,502 | 16 | ..... | 8 | 50.0 | 5 | 375 | .... | .... |
| Rest of district | 271,806 | 326 | 14.0 | 52 | 16.0 | 100 | 154 | .... | 12 |
| ADIRONDACK AND NORTH'N DISTRICT | | | | | | | | | |
| Totals | 394,772 | 499 | 14.8 | 114 | 23.0 | 142 | 125 | 2 | 12 |
| WATERTOWN | 21,700 | 28 | 15.0 | 8 | 28.5 | 8 | 142 | .... | 1 |
| Ellisburgh | 3,888 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Cape Vincent | 2,882 | 5 | ..... | 1 | 20.0 | 2 | ..... | .... | .... |
| Clayton | 4,313 | 6 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| OGDENSBURGH | 12,633 | 18 | ..... | 4 | 22.2 | 7 | 166 | .... | .... |
| Gouverneur | 6,000 | 9 | ..... | 1 | ..... | 6 | ..... | .... | 2 |
| *Potsdam* | 3,843 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Canton | 6,387 | 9 | ..... | 4 | 44.4 | 4 | 111 | .... | .... |
| *Malone* | 5,935 | 13 | ..... | 3 | 23.0 | 4 | 77 | .... | .... |
| *Plattsburgh* | 8,434 | 17 | ..... | 3 | 17.6 | 10 | 176 | .... | 1 |
| *Glens Falls* | 12,613 | 22 | ..... | 4 | 18 2 | 4 | 272 | 1 | 3 |
| *Whitehall* | 4,377 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Fort Edward | 5,216 | 9 | ..... | 3 | ..... | 2 | ..... | .... | .... |
| *Sandy Hill* | 4,473 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Granville | 5,217 | 5 | ..... | 2 | 40.0 | 0 | 400 | .... | .... |
| Greenwich | 4,172 | 10 | ..... | 3 | 30 0 | 2 | ..... | .... | .... |
| Lowville | 3,746 | 11 | ..... | 2 | 18.2 | 4 | ..... | .... | .... |
| Rest of district | 278,943 | 324 | 13.5 | 76 | 23.0 | 85 | 100 | 1 | 5 |
| MOHAWK VALLEY DISTRICT | | | | | | | | | |
| Totals | 408,973 | 526 | 15.3 | 91 | 15.4 | 154 | 133 | 2 | 20 |
| SCHENECTADY | 31,682 | 43 | 16.0 | 6 | 14.0 | 4 | 140 | .... | 3 |
| Cobleskill | 3,973 | 6 | ..... | 1 | 16.6 | 3 | ..... | .... | .... |
| AMSTERDAM | 20,929 | 31 | 17.4 | 7 | 22.6 | 5 | 130 | .... | 2 |
| *Fort Plain* | 2,444 | 6 | ..... | 0 | ..... | 4 | 333 | .... | 1 |
| JOHNSTOWN | 10,130 | 10 | ..... | 0 | ..... | 5 | 100 | .... | .... |
| GLOVERSVILLE | 18,349 | 17 | ..... | 3 | 17.7 | 6 | 59 | .... | .... |
| LITTLE FALLS | 10,381 | 10 | ..... | 2 | 20.0 | 1 | 300 | .... | 1 |
| *Herkimer* | 5,555 | 8 | ..... | 0 | ..... | 3 | 125 | .... | .... |
| *Ilion* | 5,138 | 6 | ..... | 1 | 16.6 | 2 | ..... | .... | .... |
| UTICA | 56,383 | 73 | 14 3 | 18 | 24.6 | 15 | 41 | .... | .... |
| Whitestown | 6,235 | 10 | ..... | 2 | 20.0 | 2 | 100 | 1 | .... |
| ROME | 15,343 | 25 | ..... | 1 | 4.0 | 7 | 120 | .... | .... |
| Boonville | 3,332 | 3 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Camden | 3,745 | 5 | ..... | 0 | ..... | 0 | 200 | .... | 1 |
| Waterford | 6,157 | 9 | ..... | 1 | 11.1 | 1 | ..... | .... | .... |
| *Mechanicville* | 4,695 | 5 | ..... | 1 | 20.0 | 0 | 200 | .... | .... |
| *Ballston Spa* | 3,923 | 3 | ..... | 1 | 33.3 | 0 | ..... | .... | .... |
| *Saratoga Springs* | 12,409 | 24 | ..... | 4 | 16 6 | 5 | 125 | .... | 2 |
| Rest of district | 188,170 | 232 | 14.0 | 43 | 18.3 | 88 | 175 | 1 | 10 |
| SOUTHERN TIER DISTRICT | | | | | | | | | |
| Totals | 429,434 | 454 | 13.0 | 54 | 11.8 | 149 | 118 | .... | 15 |
| BINGHAMTON | 39,647 | 57 | 17.0 | 6 | 10.5 | 14 | 88 | .... | 3 |
| *Owego* | 5,039 | 4 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| CANDOR | 3,330 | 3 | ..... | 0 | ..... | 1 | 333 | .... | 1 |
| *Waverly* | 4,465 | 8 | ..... | 1 | 12.5 | 1 | ..... | .... | .... |
| *ELMIRA* | 35,672 | 43 | 14.0 | 7 | 16.3 | 8 | 185 | .... | 1 |

**OCTOBER—(*Continued*)**

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | 1 | 1 | --- | 1 | 1 |
| --- | 1 | --- | --- | --- | --- | 1 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | 2 | --- | 1 | 1 | 1 | 2 | --- | 2 | 1 | --- | 1 | 1 |
| 1 | --- | --- | --- | 4 | --- | 1 | --- | --- | --- | 2 | --- | 1 | 2 | 1 | 1 | 1 | 2 |
| 2 | --- | --- | --- | --- | 8 | 24 | 22 | 25 | 1 | 36 | 17 | 51 | 49 | 15 | 16 | 23 | 21 |
| --- | 2 | --- | --- | 1 | 10 | 34 | 44 | 45 | --- | 54 | 26 | 61 | 75 | 21 | 22 | 42 | 47 |
| --- | --- | --- | --- | --- | 1 | 1 | 1 | 1 | --- | 5 | 1 | 4 | 3 | 2 | 3 | 1 | 3 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 1 | --- | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 2 | --- | --- | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 1 | 1 | 3 | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | 3 | 4 | 3 | --- | --- | 1 | 3 | 2 | --- | 2 | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | 1 | --- | 1 | 2 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | --- | 1 | --- | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | 2 | --- | 1 | 2 | 1 | --- | --- | 1 |
| --- | --- | --- | --- | --- | 1 | --- | 1 | 1 | --- | 2 | --- | 3 | 2 | --- | --- | 2 | 1 |
| --- | --- | --- | --- | --- | 1 | 1 | --- | 3 | --- | 1 | --- | 4 | 3 | 1 | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | 1 | 2 | --- | --- | 4 | 1 | --- | 5 | 2 | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- |
| --- | --- | --- | --- | --- | 2 | --- | 1 | --- | --- | 1 | --- | --- | 2 | 1 | --- | 1 | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | 1 | --- | --- | --- | --- |
| --- | --- | --- | --- | 1 | --- | 1 | 2 | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 2 | --- | 1 | 3 | 1 | --- | --- | 2 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | 1 | 3 | 1 | 1 | 1 | 2 |
| --- | 2 | --- | --- | --- | 5 | 25 | 31 | 34 | --- | 32 | 21 | 39 | 43 | 12 | 13 | 30 | 31 |
| --- | 1 | 1 | 2 | 1 | 19 | 23 | 54 | 49 | 5 | 43 | 35 | 57 | 53 | 25 | 33 | 47 | 55 |
| --- | --- | --- | --- | --- | 3 | --- | 7 | 4 | 2 | 2 | --- | 4 | 6 | 1 | 4 | 1 | 6 |
| --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 1 | --- | --- | --- | --- | --- | 2 | 2 |
| --- | --- | --- | 1 | --- | 1 | --- | 3 | 2 | 2 | 1 | --- | 2 | 2 | 3 | 4 | 2 | 6 |
| --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 2 | 1 |
| --- | --- | --- | --- | --- | 1 | --- | 2 | 1 | --- | --- | 1 | 1 | 2 | --- | 2 | --- | --- |
| --- | --- | --- | --- | --- | --- | 1 | 3 | 1 | --- | 2 | 5 | --- | --- | --- | 3 | --- | 2 |
| --- | --- | --- | --- | --- | --- | 2 | --- | 1 | --- | --- | 1 | 1 | --- | 3 | --- | 1 | --- |
| --- | --- | --- | --- | --- | 1 | --- | 1 | 2 | --- | 2 | --- | 1 | --- | --- | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | 3 | --- | --- | 1 | --- | 1 | --- | 1 | --- | --- | --- |
| --- | --- | --- | --- | --- | 2 | 1 | 10 | 10 | --- | 7 | 4 | 10 | 11 | 2 | 3 | 4 | 9 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 4 | 2 | 2 |
| --- | --- | --- | --- | --- | 2 | 1 | 1 | 1 | --- | 3 | 3 | 6 | 1 | 1 | 1 | 3 | 2 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3 | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 | 2 | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | --- | 1 | 3 | 1 | 1 | --- | --- | 1 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | 2 | --- | 1 | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | --- | 1 | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | 1 | --- | 6 | 3 | --- | --- | 4 | 1 | 2 | 1 | --- | 2 | 2 |
| --- | 1 | 1 | --- | 1 | 8 | 18 | 17 | 20 | 1 | 22 | 16 | 21 | 24 | 11 | 11 | 28 | 21 |
| --- | 2 | --- | 1 | 1 | 13 | 21 | 31 | 39 | 2 | 50 | 33 | 54 | 62 | 19 | 31 | 34 | 45 |
| --- | --- | --- | --- | --- | 2 | --- | 6 | 6 | --- | 4 | 4 | 6 | 5 | 5 | 4 | 2 | 10 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | 2 | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3 | --- | --- | 3 | --- | 1 | --- | 1 |
| --- | --- | --- | --- | --- | 6 | 1 | 1 | 1 | 1 | 8 | 5 | 2 | 3 | 1 | 4 | 3 | 6 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| **SOUTHERN TIER DIST.—(*Con.*)** | | | | | | | | | |
| Horseheads | 4,944 | 4 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| HORNELLSVILLE | 12,000 | 14 | ..... | 1 | 7.0 | 3 | 70 | .... | 1 |
| *Bath* | 5,000 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| CORNING | 11,061 | 11 | ..... | 1 | 9.0 | 0 | 180 | .... | .... |
| Wellsville | 5,000 | 7 | ..... | 1 | 14.2 | 4 | ..... | .... | .... |
| OLEAN | 9,462 | 7 | ..... | 2 | ..... | 0 | ..... | .... | .... |
| *Salamanca* | 4,251 | 4 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| DUNKIRK | 11,616 | 10 | ..... | 1 | 10.0 | 4 | 200 | .... | 1 |
| JAMESTOWN | 22,892 | 24 | 12.8 | 4 | 16.7 | 2 | 42 | .... | .... |
| *Westfield* | 2,430 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Fredonia* | 4,125 | 10 | ..... | 3 | 30.0 | 2 | 100 | .... | .... |
| Rest of district | 248,500 | 245 | 12.0 | 27 | 11.1 | 105 | 131 | .... | 8 |
| **EAST CENTRAL DISTRICT** | | | | | | | | | |
| Totals | 401,082 | 418 | 12.1 | 74 | 17.5 | 127 | 96 | 4 | 12 |
| SYRACUSE | 108,374 | 111 | 12.1 | 29 | 26.2 | 19 | 45 | .... | 1 |
| *Baldwinsville* | 3,090 | 1 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| De Witt | 5,435 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| CORTLAND | 9,014 | 11 | ..... | 4 | 36.4 | 1 | 273 | 1 | 1 |
| *Homer* | 2,381 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Oneida* | 7,942 | 8 | ..... | 0 | ..... | 3 | 125 | .... | .... |
| Hamilton | 3,744 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Cazenovia | 3,830 | 10 | ..... | 1 | 10.0 | 3 | ..... | .... | .... |
| Brookfield | 2,726 | 4 | ..... | 0 | ..... | 3 | ..... | .... | 1 |
| *Norwich* | 5,766 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| *Oneonta* | 7,147 | 4 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Worcester | 2,409 | 5 | ..... | 1 | 20.0 | 0 | ..... | .... | .... |
| *Cooperstown* | 2,362 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Walton | 4,869 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Delhi | 3,243 | 3 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Liberty | 4,568 | 10 | ..... | 1 | 10.0 | 2 | 100 | .... | .... |
| Rest of district | 225,844 | 232 | 12.0 | 36 | 15.5 | 86 | 105 | 3 | 9 |
| **WEST CENTRAL DISTRICT** | | | | | | | | | |
| Totals | 316,000 | 355 | 13.3 | 53 | 15.0 | 119 | 118 | .... | 13 |
| AUBURN | 30,345 | 32 | 12.5 | 7 | 21.9 | 8 | 125 | .... | 1 |
| ITHACA | 13,136 | 20 | ..... | 1 | 5.0 | 6 | 150 | .... | 2 |
| Hector | 4,137 | 2 | ..... | 1 | ..... | 1 | ..... | .... | .... |
| *Waterloo* | 4,256 | 4 | ..... | 1 | 25.0 | 0 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 10 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| GENEVA | 10,433 | 13 | ..... | 0 | ..... | 2 | 77 | .... | 1 |
| *Canandaigua* | 6,151 | 4 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Manchester | 4,733 | 7 | ..... | 1 | 14.2 | 1 | 285 | .... | 1 |
| Phelps | 4,788 | 7 | ..... | 1 | 14.2 | 3 | 142 | .... | .... |
| *Penn Yan* | 4,650 | 8 | ..... | 2 | 25.0 | 0 | 250 | .... | .... |
| *Batavia* | 9,180 | 6 | ..... | 2 | 33.3 | 0 | 333 | .... | 1 |
| *Dansville* | 3,633 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| *Le Roy* | 3,144 | 6 | ..... | 2 | 33.3 | 2 | 166 | .... | 1 |
| Warsaw | 4,341 | 3 | ..... | 1 | 33.3 | 2 | ..... | .... | .... |
| Rest of district | 206,500 | 230 | 13.0 | 33 | 14.5 | 90 | 105 | .... | 6 |
| **LAKE ONTARIO AND WESTERN DISTRICT** | | | | | | | | | |
| Totals | 879,022 | 1,002 | 13.6 | 208 | 20.8 | 222 | 130 | 2 | 28 |
| BUFFALO | 352,387 | 431 | 14.5 | 110 | 25.6 | 63 | 165 | 1 | 11 |
| TONAWANDA | 7,421 | 9 | ..... | 3 | 33 3 | 1 | ..... | .... | .... |
| *Amherst* | 4,223 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |

FOR OCTOBER—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| | | | | | | | | 1 | | | 1 | | 1 | | | 1 | | |
| | | | | | | | | 1 | 4 | | | 3 | 1 | 1 | | 2 | 1 | |
| | | | | | | | | | | | | | | 1 | | | 1 | 1 |
| | | | | | | | 2 | | 1 | | 3 | | 1 | 3 | 1 | | | |
| | | | | | | | | 2 | | | | | 1 | | | | 1 | 3 |
| | | 1 | | | | | | | 2 | | 1 | | 1 | | 1 | 1 | | |
| | | | | | | | | | | | | | 1 | 1 | | 2 | | |
| | | | | | | | 1 | | | | 1 | 1 | 1 | 1 | | 2 | 1 | 1 |
| | | | | | | | 1 | | 4 | | 5 | 2 | 1 | 2 | 2 | 2 | 2 | 3 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | 1 | | 3 | | | | 1 | 1 | | | | 4 |
| 1 | | 1 | | 1 | 1 | 5 | 15 | 20 | 18 | 1 | 23 | 17 | 35 | 39 | 9 | 12 | 23 | 16 |
| | | | | | 2 | 6 | 15 | 25 | 45 | 2 | 34 | 32 | 53 | 64 | 20 | 27 | 29 | 48 |
| | | | | | | 2 | 5 | 9 | 15 | | 8 | 9 | 17 | 17 | 2 | 6 | 2 | 18 |
| | | | | | | | 1 | | | | | | | | | | | |
| | | | | | | | | | | | 1 | | | | | | 1 | |
| | | | | | | | 1 | 1 | | | | 1 | 1 | 2 | 1 | | | 2 |
| | | | | | | | | | | | | | | | | | | 1 |
| | | | | | | 1 | | | 1 | | 1 | 1 | 2 | | 2 | | | |
| | | | | | | | | | | | | 2 | 2 | | 1 | | 1 | |
| | | | | | | | | 1 | | | | | 1 | 2 | | 2 | 3 | 1 |
| | | | | | | | | | | | | | 1 | | 1 | | 1 | |
| | | | | | | | | | 1 | | 1 | | | 1 | | 1 | | 1 |
| | | | | | | | | | | | | | 2 | 1 | | 1 | | |
| | | | | | | | | | 1 | | 1 | | | 1 | | | | 2 |
| | | | | | | | | | 1 | | 1 | | | | | | 1 | |
| | | | | | | | | | | | | | | 1 | | | | 1 |
| | | | | | | | | | | | | 2 | | | | | 1 | |
| | | | | | | | 1 | 1 | 6 | | | 1 | 1 | | | | | |
| | | | | | 2 | 3 | 7 | 13 | 20 | 2 | 21 | 16 | 26 | 39 | 13 | 17 | 19 | 22 |
| | | | | | 4 | 4 | 20 | 23 | 27 | 1 | 43 | 22 | 43 | 49 | 25 | 14 | 34 | 33 |
| | | | | | | 2 | 1 | 2 | 3 | | 2 | 2 | 3 | 3 | 4 | 1 | 2 | 5 |
| | | | | | | | 1 | 1 | 2 | | 1 | 1 | 3 | 3 | 1 | 1 | 2 | 2 |
| | | | | | | | | | | | | | | | | 1 | 1 | |
| | | | | | | | | | | | | | | 1 | 2 | | | 1 |
| | | | | | | | | 1 | 1 | | 2 | 2 | 1 | | 1 | | 1 | 1 |
| | | | | | | | | 2 | 1 | | 3 | 2 | 2 | 1 | | 1 | | |
| | | | | | | | | 1 | 1 | | | | | 1 | 1 | | | |
| | | | | | | | 1 | | | | | | | | 2 | 2 | 1 | |
| | | | | | | | 1 | 2 | 2 | | 1 | | | | | | 1 | |
| | | | | | 1 | | 1 | | | | 1 | | 2 | 1 | | | | 2 |
| | | | | | 2 | | | 1 | 1 | | | 1 | | | | | | |
| | | | | | | | | | | | | | 1 | | 1 | | | 1 |
| | | | | | | | | | | | | | 1 | 2 | | | | 2 |
| | | | | | | | | | 1 | | 1 | | | | | | 1 | |
| | | | | | 1 | 2 | 15 | 12 | 15 | 1 | 32 | 14 | 30 | 37 | 13 | 8 | 25 | 19 |
| | | | | 1 | 10 | 27 | 62 | 102 | 101 | 2 | 83 | 66 | 116 | 128 | 54 | 54 | 72 | 94 |
| | | | | | 1 | 17 | 41 | 43 | 43 | 2 | 29 | 30 | 36 | 52 | 18 | 31 | 36 | 40 |
| | | | | | | | | | | | | | | 2 | 1 | | 1 | 3 |
| | | | | | | | | | 1 | | 1 | | | 1 | | | | |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Con.*) | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| LOCKPORT | 16,581 | 19 | ..... | 4 | 21.0 | 3 | 168 | .... | .... |
| NIAGARA FALLS | 19,457 | 28 | 17 0 | 10 | 33.0 | 1 | 214 | .... | .... |
| *Medina* | 4,716 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| *Albion* | 4,477 | 10 | ..... | 3 | 30.0 | 1 | 300 | .... | .... |
| *Brockport* | 3,400 | 4 | ..... | 2 | 50.0 | 0 | ..... | .... | .... |
| ROCHESTER | 162,608 | 185 | 13.4 | 30 | 16.3 | 35 | 68 | .... | 4 |
| Palmyra | 3,758 | 2 | ..... | 0 | ..... | 0 | 500 | .... | 1 |
| *Newark* | 4,578 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Lyons | 5,824 | 12 | ..... | 3 | 25.0 | 2 | 166 | 1 | .... |
| *Clyde* | 2,507 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| OSWEGO | 22,200 | 28 | 15.8 | 5 | 14.8 | 7 | 60 | .... | 1 |
| *Fulton* | 5,281 | 10 | ..... | 2 | 20.0 | 2 | ..... | .... | .... |
| Richland | 3,535 | 7 | ..... | 0 | ..... | 5 | 142 | .... | 1 |
| Rest of district | 247,000 | 241 | 12.0 | 34 | 14.0 | 98 | 120 | .... | 9 |
| Totals for the state | 7,268,000 | 9,738 | 16.0 | 2,627 | 27.0 | 1,646 | 150 | 25 | 235 |
| Average for past five years | ..... | 9,267 | 16.3 | 2,442 | 26.0 | ..... | 132 | 35 | 227 |

FOR OCTOBER—(*Concluded*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | 2 | 1 | 2 | .... | 3 | .... | 3 | 3 | 1 | .... | 2 | 1 |
| .... | .... | .... | .... | .... | 1 | 1 | 4 | 4 | 3 | .... | 4 | 1 | .... | 2 | 2 | 3 | .... | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | 3 | .... | .... | .... | 1 | .... | .... | .... | 2 | 1 | .... | 1 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 2 | .... | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 3 | 5 | 19 | 26 | .... | 16 | 14 | 21 | 30 | 12 | 9 | 8 | 18 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 2 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 3 | .... | .... | 2 | .... | 1 | 2 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 3 | .... | 2 | 2 | 3 | 6 | 2 | .... | 2 | 4 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | 1 | .... | 4 | 1 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | 1 | .... | 1 | .... | 1 | 1 |
| .... | .... | .... | .... | 1 | 5 | 5 | 9 | 28 | 18 | .... | 22 | 17 | 40 | 25 | 13 | 10 | 21 | 18 |
| 40 | 14 | 38 | 20 | 17 | 53 | 260 | 733 | 916 | 1,112 | 59 | 659 | 792 | 923 | 991 | 424 | 527 | 425 | 1,475 |
| 43 | .... | 36 | 25 | 14 | 60 | 278 | 508 | 1,077 | 1,050 | 67 | 827 | 680 | 843 | 938 | 365 | 528 | 433 | 1,233 |

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS.

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| **MARITIME DISTRICT** | | | | | | | | | |
| Totals | 3,852,922 | 5,416 | 17.0 | 1,460 | 26.7 | 598 | 122 | 16 | 80 |
| **CITY OF NEW YORK** | | | | | | | | | |
| Totals | 3,526,517 | 5,053 | 17.3 | 1,374 | 27.2 | 524 | 125 | 15 | 76 |
| BOROUGH OF MANHATTAN | 1,873,562 | 2,784 | 18.0 | 779 | 28.0 | 256 | 108 | 10 | 36 |
| BOROUGH OF THE BRONX | 222,124 | 309 | 17.3 | 64 | 18.0 | 39 | 103 | 2 | 3 |
| BOROUGH OF BROOKLYN | 1,209,064 | 1,674 | 16.7 | 463 | 27.7 | 194 | 150 | 3 | 31 |
| BOROUGH OF QUEENS | 162,834 | 195 | 14.6 | 51 | 25.5 | 17 | 150 | .... | 3 |
| BOROUGH OF RICHMOND | 68,933 | 91 | 16.0 | 17 | 18.6 | 18 | 88 | ... | 3 |
| Oyster Bay | 16,334 | 11 | ..... | 2 | 19.1 | 5 | ..... | .... | .... |
| Hempstead | 27,066 | 24 | ..... | 7 | 19.0 | 3 | 43 | 1 | .... |
| North Hempstead | 12,048 | 17 | ..... | 10 | 60.0 | 2 | 233 | .... | .... |
| Southold | 8,301 | 3 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Sag Harbor* | 2,000 | 6 | ..... | 1 | 16.7 | 0 | ..... | .... | .... |
| Huntington | 9,483 | 11 | ..... | 1 | 9.0 | 3 | 90 | .... | 1 |
| Brookhaven | 14,592 | 18 | ..... | 0 | ..... | 8 | 110 | .... | .... |
| YONKERS | 47,931 | 63 | 16.0 | 18 | 28.5 | 9 | 143 | .... | 1 |
| Greenburgh | 15,564 | 8 | ..... | 2 | 25.0 | 0 | 250 | .... | .... |
| MOUNT VERNON | 20,346 | 21 | 12.6 | 6 | 28.5 | 3 | ..... | .... | .... |
| *Port Chester* | 7,440 | 14 | ..... | 6 | 42.8 | 0 | 214 | .... | .... |
| *Ossining* | 7,939 | 12 | ..... | 1 | 8.3 | 1 | ..... | .... | .... |
| NEW ROCHELLE | 14,720 | 18 | ..... | 2 | 11.1 | 3 | 55 | .... | .... |
| *Peekskill* | 10,358 | 22 | ..... | 6 | 27.3 | 4 | 46 | .... | .... |
| *White Plains* | 7,900 | 8 | ..... | 4 | 50.0 | 2 | 250 | .... | .... |
| Rest of district | 85,000 | 107 | 15.5 | 20 | 20.0 | 29 | 110 | .... | 2 |
| **HUDSON VALLEY DISTRICT** | | | | | | | | | |
| Totals | 690,143 | 864 | 15.2 | 140 | 16.0 | 203 | 71 | 3 | 8 |
| ALBANY | 94,151 | 124 | 16.0 | 21 | 17.0 | 37 | 72 | ... | .... |
| COHOES | 24,000 | 46 | 23.0 | 9 | 20.0 | 6 | 43 | 1 | .... |
| TROY | 75,057 | 128 | 20.5 | 20 | 15.6 | 18 | 78 | 2 | 2 |
| WATERVLIET | 14,321 | 20 | ..... | 3 | 15.0 | 5 | 100 | ... | 1 |
| *Green Island* | 4,770 | 7 | ..... | 1 | 14.2 | 1 | ..... | .... | .... |
| *Hoosick Falls* | 5,671 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| RENSSELAER | 7,466 | 8 | ..... | 1 | 12.5 | 0 | 250 | .... | .... |
| Coxsackie | 4,102 | 7 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Catskill* | 5,486 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| HUDSON | 9,528 | 10 | ..... | 2 | 20.0 | 3 | 100 | ... | .... |
| KINGSTON | 24,535 | 28 | 14.0 | 6 | 21.4 | 4 | 143 | .... | .... |
| *Ellenville* | 3,000 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Marbletown | 3,511 | 1 | ..... | 0 | .... | 0 | ..... | .... | .... |
| Rosendale | 6,278 | 7 | ..... | 4 | 57.0 | 0 | 142 | ... | ... |
| Esopus | 4,907 | 4 | ..... | 2 | 50.0 | 1 | 250 | .... | .... |
| *Saugerties* | 3,700 | 1 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| POUGHKEEPSIE | 24,029 | 29 | 15.0 | 4 | 13.5 | 6 | 75 | .... | .... |
| Fishkill | 13,016 | 13 | ..... | 3 | 23.0 | 1 | ..... | .... | .... |
| *Wappingers Falls* | 3,504 | 9 | ..... | 1 | 11.1 | 1 | 111 | .. | .... |
| NEWBURGH | 25,000 | 33 | 16.0 | 9 | 28.0 | 9 | 190 | .... | 2 |
| *Port Jervis* | 9,385 | 12 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| MIDDLETOWN | 14,522 | 20 | ..... | 2 | 10.0 | 6 | 50 | ... | .... |
| Warwick | 6,403 | 5 | ..... | 2 | 40.0 | 2 | ..... | .... | .... |
| Goshen | 4,564 | 10 | ..... | 1 | 10.0 | 1 | ..... | .... | .... |

## YORK STATE DEPARTMENT OF HEALTH

### *districts, cities, villages and towns during November*, 1901

villages in *italic* and towns in roman type]

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 16 | 7 | 61 | 42 | 3 | 25 | 204 | 214 | 766 | 693 | 48 | 243 | 536 | 509 | 421 | 228 | 274 | 117 | 923 |
| 14 | 7 | 59 | 38 | 3 | 24 | 192 | 204 | 726 | 640 | 45 | 220 | 502 | 461 | 382 | 212 | 260 | 102 | 871 |
| 5 | .... | 28 | 25 | 2 | 14 | 90 | 101 | 356 | 325 | 26 | 131 | 302 | 244 | 195 | 113 | 157 | 50 | 574 |
| 3 | 7 | 5 | 1 | .... | .... | 6 | 8 | 29 | 87 | 2 | 8 | 24 | 32 | 22 | 9 | 18 | 6 | 37 |
| 5 | .... | 25 | 10 | 1 | 9 | 80 | 85 | 293 | 193 | 13 | 70 | 137 | 154 | 147 | 75 | 70 | 40 | 233 |
| 1 | .... | 1 | 2 | .... | 1 | 13 | 8 | 36 | 22 | 3 | 4 | 23 | 19 | 13 | 11 | 9 | 5 | 21 |
| .... | .... | .... | .... | .... | .... | 3 | 2 | 12 | 13 | 1 | 7 | 16 | 12 | 5 | 4 | 6 | 1 | 6 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 1 | 2 | 1 | 2 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 1 | .... | .... | 5 | 4 | 3 | 1 | 1 | 1 | 5 |
| .... | .... | .... | 2 | .... | .... | .... | 1 | 1 | .... | .... | .... | 1 | 1 | .... | 1 | .... | 1 | 8 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | 1 | 1 | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | 1 | .... | 4 | 1 | .... | 1 | 1 | .... |
| .... | .... | 1 | .... | .... | .... | .... | .... | .... | 1 | 1 | 2 | 3 | 3 | 2 | 2 | .... | 2 | 1 |
| .... | .... | .... | .... | .... | .... | 3 | 5 | 19 | 7 | .... | 5 | 2 | 6 | 6 | 1 | 3 | .... | 5 |
| .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | .... | 2 | 1 | 1 | .... | .... | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 6 | 5 | .... | .... | 3 | .... | 2 | .... | .... | 1 | 4 |
| .... | .... | .... | .... | .... | 1 | 2 | .... | 3 | 2 | .... | 3 | .... | .... | 1 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 3 | 1 | .... | 1 | 2 | 3 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 3 | .... | .... | .... | 3 | 4 | 1 | 1 | 1 | 1 | 3 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 2 | 2 | .... | 2 | 2 | 3 | 2 | 2 | 2 | 1 | 3 |
| .... | .... | 1 | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | 1 | 2 |
| 2 | .... | .... | 1 | .... | .... | 3 | 3 | 3 | 17 | 1 | 6 | 13 | 18 | 13 | 4 | 2 | 4 | 15 |
| 2 | .... | 7 | .... | 2 | 3 | 28 | 8 | 113 | 109 | 2 | 68 | 67 | 101 | 136 | 39 | 41 | 41 | 86 |
| .... | .... | .... | .... | .... | .... | 9 | .... | 18 | 12 | .... | 9 | 15 | 21 | 19 | 8 | 6 | 3 | 4 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 9 | 6 | .... | 5 | 3 | 5 | 5 | 3 | 3 | 1 | 4 |
| .... | .... | 1 | .... | 1 | 1 | 2 | 1 | 26 | 20 | 1 | 12 | 10 | 14 | 15 | 5 | 2 | 3 | 10 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 5 | 1 | .... | 2 | 2 | 1 | 1 | .... | 3 | 1 | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 3 | .... | .... | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 1 | .... | 1 | .... | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 2 | .... | 1 | 1 | .... | .... | .... | .... | 2 | .... | 2 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | 2 | 1 | 1 | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | .... | 1 | .... | 2 | 1 | .... |
| .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | 2 | .... | 3 | 1 | 1 | .... | .... | 1 |
| .... | .... | 1 | .... | .... | .... | 2 | 1 | 6 | 2 | .... | 2 | 1 | 4 | 5 | .... | .... | 1 | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 |
| .... | .... | 1 | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | .... | 2 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | 1 | .... | 1 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 2 | .... | 2 | 2 | .... | 5 | .... | 4 | 5 | 1 | .... | 4 | 4 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 3 | .... | 1 | 1 | 4 | 2 | .... | 1 | .... | .... |
| 1 | .... | .... | .... | .... | .... | .... | .... | 1 | 3 | .... | 2 | .... | .... | 2 | .... | .... | .... | .... |
| .... | .... | 3 | .... | .... | .... | 1 | .... | 4 | 4 | .... | 2 | 5 | 3 | 3 | 1 | .... | .... | 5 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 4 | .... | .... | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| 1 | .... | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | .... | 1 | 1 | 4 | 2 | 3 | .... | 4 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 2 | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 1 | .... | .... | .... | 1 | 2 | .... | 4 | .... | .... |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| **HUDSON VALLEY DIST.—(*Con.*)** | | | | | | | | | |
| Montgomery | 5,939 | 11 | ..... | 1 | 9.0 | 3 | ..... | .... | .... |
| Haverstraw | 9,874 | 11 | ..... | 1 | 9.0 | 0 | ..... | .... | .... |
| *Nyack* | 4,275 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Ramapo | 7,502 | 17 | ..... | 1 | 6 0 | 5 | 120 | .... | .... |
| Rest of district | 271,800 | 289 | 12.6 | 44 | 14.8 | 85 | 60 | .... | 3 |
| **ADIRONDACK AND NORTHERN DISTRICT** | | | | | | | | | |
| Totals | 394,772 | 350 | 11.0 | 57 | 16.5 | 113 | 100 | 2 | 6 |
| WATERTOWN | 21,700 | 18 | 11.0 | 5 | 25.0 | 5 | 111 | .... | .... |
| Ellisburgh | 3,888 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Cape Vincent | 2,882 | 3 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Clayton | 4,318 | 2 | ..... | 2 | ..... | 0 | ..... | .... | .... |
| OGDENSBURGH | 12,633 | 14 | ..... | 2 | 14.2 | 5 | 214 | .... | .... |
| Gouverneur | 6,000 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| *Potsdam* | 3,943 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Canton | 6,387 | 6 | ..... | 1 | 16.7 | 4 | ..... | .... | .... |
| *Malone* | 5,935 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Plattsburgh* | 8,434 | 9 | ..... | 4 | 44.4 | 0 | 222 | .... | .... |
| *Glens Falls* | 12,613 | 23 | ..... | 5 | 13.0 | 4 | 87 | 1 | .... |
| *Whitehall* | 4,377 | 5 | ..... | 2 | 40.0 | 2 | 600 | .... | .... |
| Fort Edward | 5,216 | 6 | ..... | 2 | 33.3 | 2 | 167 | .... | .... |
| *Sandy Hill* | 4,473 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| Granville | 5,217 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| Greenwich | 4,172 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Lowville | 3,746 | 3 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Rest of district | 278,943 | 232 | 10.0 | 31 | 13.5 | 73 | 91 | 1 | 6 |
| **MOHAWK VALLEY DISTRICT** | | | | | | | | | |
| Totals | 408,973 | 501 | 15.0 | 68 | 13.6 | 148 | 100 | .... | 11 |
| SCHENECTADY | 31,682 | 53 | 20.0 | 17 | 32.1 | 12 | 245 | .... | 1 |
| Cobleskill | 3,973 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| AMSTERDAM | 20,929 | 32 | 18 0 | 4 | 12.5 | 5 | 32 | .... | 1 |
| *Fort Plain* | 2,444 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| JOHNSTOWN | 10,130 | 9 | ..... | 0 | ..... | 5 | ..... | .... | .... |
| GLOVERSVILLE | 18,349 | 27 | ..... | 4 | 14.7 | 3 | 38 | .... | 1 |
| LITTLE FALLS | 10,381 | 15 | ..... | 3 | 20.0 | 4 | 67 | .... | .... |
| *Herkimer* | 5,555 | 5 | ..... | 2 | 40.0 | 1 | ..... | .... | .... |
| *Ilion* | 5,138 | 5 | ..... | 0 | ..... | 2 | 200 | .... | .... |
| UTICA | 56,383 | 62 | 13.5 | 4 | 6.5 | 11 | 125 | .... | 2 |
| Whitestown | 6,235 | 11 | ..... | 1 | 9.0 | 3 | 90 | .... | 1 |
| ROME | 15,343 | 24 | ..... | 1 | 4.3 | 8 | 43 | .... | .... |
| Boonville | 3,332 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Camden | 3,745 | 3 | ..... | 1 | 33.3 | 1 | ..... | .... | .... |
| Waterford | 6,157 | 7 | ..... | 1 | 14.2 | 3 | ..... | .... | .... |
| *Mechanicville* | 4,695 | 4 | ..... | 2 | 50.0 | 1 | 500 | .... | .... |
| *Ballston Spa* | 3,923 | 5 | ..... | 1 | 20.0 | 0 | 200 | .... | 1 |
| *Saratoga Springs* | 12,409 | 24 | ..... | 3 | 12.5 | 6 | 125 | .... | 1 |
| Rest of district | 188,170 | 208 | 13.5 | 24 | 13.0 | 79 | 90 | .... | 3 |
| **SOUTHERN TIER DISTRICT** | | | | | | | | | |
| Totals | 429,434 | 458 | 13.0 | 72 | 15.8 | 156 | 92 | .... | 8 |
| BINGHAMTON | 39,647 | 48 | 15.0 | 14 | 29.0 | 10 | 150 | .... | .... |
| *Owego* | 5,039 | 9 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Candor | 3,330 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| *Waverly* | 4,465 | 6 | ..... | 1 | 16.7 | 1 | ..... | .... | .... |
| ELMIRA | 35,672 | 46 | 15.5 | 4 | 8.6 | 12 | 110 | .... | .... |

: NOVEMBER—(*Continued*)

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 2 | 1 | 1 | 2 | ... | ... | 1 | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | 1 | ... | 2 | 4 | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | 1 | 1 | ... | 3 | ... | 2 | 2 | ... | 2 | 2 | ... | 1 | 3 |
| ... | 1 | ... | 1 | 1 | 8 | 3 | 25 | 37 | ... | 19 | 21 | 31 | 55 | 14 | 12 | 22 | 36 |
| ... | 3 | 1 | ... | 1 | 12 | 8 | 30 | 40 | 3 | 27 | 36 | 34 | 62 | 14 | 10 | 24 | 36 |
| ... | ... | ... | ... | 1 | ... | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 8 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | 3 | 1 | 2 | ... | 1 | 2 | 2 | 2 | 1 | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 | 1 | 1 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 2 | ... | ... | ... | 1 | 2 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 2 | ... | 1 | 1 | ... | ... | ... |
| ... | ... | ... | ... | ... | 2 | ... | 2 | 2 | ... | ... | ... | ... | 1 | ... | 1 | ... | 1 |
| ... | 1 | ... | ... | ... | ... | ... | 2 | 1 | 1 | 1 | 2 | 2 | 7 | ... | 1 | ... | 4 |
| ... | ... | ... | ... | ... | 3 | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | 1 | 2 |
| ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | 3 | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | 1 | ... | ... | 3 | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... |
| ... | 2 | 1 | ... | ... | 6 | 4 | 20 | 29 | ... | 22 | 19 | 23 | 39 | 11 | 8 | 18 | 22 |
| ... | 1 | 1 | ... | 1 | 23 | 13 | 60 | 46 | 5 | 41 | 40 | 65 | 68 | 24 | 26 | 29 | 47 |
| ... | ... | ... | ... | ... | 6 | 6 | 7 | 3 | 1 | 7 | 2 | 6 | 8 | ... | 1 | 2 | 3 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | ... | ... | 7 | 4 | ... | 1 | 3 | 2 | 3 | 2 | 4 | ... | 5 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | 3 | 3 | 1 | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 2 | 4 | 2 | 1 | 2 | 2 | 3 | 1 | 3 | ... | 6 |
| ... | ... | ... | ... | ... | ... | 1 | 2 | 1 | ... | ... | 2 | 1 | 3 | 1 | 2 | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | 2 | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | 2 | 1 | ... | ... | ... | ... |
| ... | 1 | ... | ... | ... | 5 | ... | 7 | 4 | 2 | 3 | 7 | 8 | 6 | 6 | 5 | 3 | 3 |
| ... | ... | ... | ... | ... | ... | ... | 3 | 2 | ... | 2 | ... | 1 | 1 | ... | ... | 1 | ... |
| ... | ... | ... | ... | ... | 1 | ... | 3 | 2 | ... | 2 | 1 | 6 | 2 | ... | 2 | 4 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 2 | 1 | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 1 | ... | 1 | 1 | 1 |
| ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | 2 | 2 | 4 | ... | 3 | 3 | ... | 3 | 2 | 1 | ... | 4 |
| ... | ... | 1 | ... | 1 | 9 | 3 | 24 | 18 | ... | 20 | 19 | 25 | 31 | 11 | 7 | 17 | 19 |
| ... | 1 | 2 | ... | 1 | 16 | 13 | 57 | 29 | 2 | 35 | 34 | 55 | 64 | 18 | 25 | 41 | 56 |
| ... | ... | ... | ... | ... | 3 | 4 | 7 | 6 | ... | 3 | 3 | 1 | 3 | 1 | 5 | 4 | 8 |
| ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | 1 | 1 | 1 | 2 | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | 1 | 2 | ... | 1 | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | 1 | 1 | 1 | ... | 5 |
| ... | ... | ... | ... | ... | 4 | 1 | 8 | 3 | ... | 3 | 3 | 4 | 5 | 3 | 4 | 3 | 1 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 8 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| HORNELLSVILLE | 12,000 | 10 | ..... | 1 | 10.0 | 3 | 200 | .... | 2 |
| *Bath* | 5,000 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| CORNING | 11,061 | 13 | ..... | 1 | 7.7 | 5 | 77 | .... | 1 |
| Wellsville | 5,000 | 6 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| OLEAN | 9,462 | 4 | ..... | 2 | ..... | 1 | ..... | .... | .... |
| *Salamanca* | 4,251 | 9 | ..... | 4 | 44.4 | 2 | 111 | .... | .... |
| DUNKIRK | 11,616 | 9 | ..... | 2 | 22.2 | 1 | ..... | .... | .... |
| JAMESTOWN | 22,892 | 26 | 14 0 | 4 | 15.3 | 6 | 153 | .... | 1 |
| *Westfield* | 2,430 | 5 | ..... | 1 | 20.0 | 4 | ..... | .... | .... |
| *Fredonia* | 4,125 | 5 | ..... | 0 | ..... | 1 | 250 | .... | .... |
| Rest of district | 248,500 | 242 | 12.0 | 38 | 16.0 | 94 | 87 | .... | 4 |
| EAST CENTRAL DISTRICT Totals | 401,082 | 440 | 13.5 | 52 | 11.8 | 155 | 75 | .... | 11 |
| SYRACUSE | 108,374 | 112 | 12.5 | 13 | 11.6 | 23 | 62 | .... | 2 |
| *Baldwinsville* | 3,000 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| De Witt | 5,435 | 5 | ..... | 1 | 20.0 | 2 | ..... | .... | .... |
| CORTLAND | 9,014 | 14 | ..... | 6 | 42.8 | 0 | ..... | .... | .... |
| *Homer* | 2,381 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| ONEIDA | 7,942 | 10 | ..... | 1 | 10.0 | 5 | 200 | .... | .... |
| Hamilton | 3,744 | 7 | ..... | 2 | 28.5 | 1 | 128 | .... | .... |
| Cazenovia | 3,830 | 1 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Brookfield | 2,726 | 4 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Norwich* | 5,766 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Oneonta* | 7,147 | 11 | ..... | 2 | 19.1 | 3 | 90 | .... | 1 |
| Worcester | 2,409 | 4 | ..... | 1 | 25.0 | 2 | ..... | .... | .... |
| *Cooperstown* | 2,368 | 3 | ..... | 0 | ..... | 0 | 333 | .... | 1 |
| Walton | 4,869 | 9 | ..... | 2 | 22.2 | 3 | 111 | .... | .... |
| Delhi | 3,243 | 3 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Liberty | 4,568 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Rest of district | 225,844 | 250 | 13.5 | 22 | 8.8 | 114 | 80 | .... | 7 |
| WEST CENTRAL DISTRICT Totals | 316,000 | 317 | 12.0 | 43 | 13.7 | 117 | 64 | .... | 6 |
| AUBURN | 30,345 | 36 | 14.5 | 5 | 14.0 | 10 | 55 | .... | 1 |
| ITHACA | 13,136 | 15 | ..... | 3 | 20.0 | 2 | 200 | .... | 2 |
| Hector | 4,137 | 3 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| *Waterloo* | 4,256 | 4 | ..... | 1 | 25.0 | 2 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 11 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| GENEVA | 10,433 | 11 | ..... | 0 | ..... | 5 | ..... | .... | .... |
| *Canandaigua* | 6,151 | 11 | ..... | 1 | 9.0 | 4 | 190 | .... | .... |
| Manchester | 4,733 | 6 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| Phelps | 4,788 | 5 | ..... | 3 | 60.0 | 1 | 200 | .... | 1 |
| *Penn Yan* | 4,650 | 8 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Batavia* | 9,180 | 7 | ..... | 2 | 28.5 | 2 | 142 | .... | .... |
| *Dansville* | 3,633 | 4 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Le Roy* | 3,144 | 8 | ..... | 1 | 12.5 | 2 | 125 | .... | .... |
| Warsaw | 4,341 | 2 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Rest of district | 206,500 | 186 | 11.0 | 25 | 13.5 | 79 | 55 | .... | 2 |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 879,022 | 963 | 13.5 | 205 | 21.3 | 178 | 107 | 5 | 17 |
| BUFFALO | 352,387 | 424 | 14.7 | 116 | 27.3 | 48 | 136 | 2 | 5 |
| *Tonawanda* | 7,421 | 9 | ..... | 2 | 22.2 | 1 | 111 | 1 | .... |
| *Amherst* | 4,223 | 5 | ..... | 1 | 20.0 | 3 | ..... | .... | .... |

FOR NOVEMBER—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | 5 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... | .... | 1 | 2 | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 5 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | 1 | 2 | 1 | 2 | 1 | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 2 | .... | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 3 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | 1 | 2 | .... | 1 | .... | .... | .... | 3 |
| .... | .... | .... | 1 | .... | .... | 2 | .... | 1 | 1 | .... | 3 | .... | 2 | .... | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 4 | 2 | .... | 3 | 3 | 4 | 4 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 3 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | 1 | .... | .... | .... | .... | 1 | .... | .... |
| 1 | .... | 1 | 1 | .... | 1 | 6 | 7 | 29 | 11 | 2 | 15 | 18 | 36 | 32 | 10 | 10 | 30 | 28 |
| 2 | .... | 2 | 1 | .... | 1 | 10 | 6 | 34 | 41 | 5 | 34 | 27 | 74 | 75 | 19 | 18 | 41 | 39 |
| .... | .... | .... | .... | .... | .... | 3 | 2 | 10 | 10 | 1 | 12 | 7 | 21 | 18 | 3 | 6 | 6 | 11 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | .... | 1 | .... | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 2 | 1 | .... | .... | 1 | 1 | 2 | .... | .... | 5 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 2 | .... | 1 | .... | .... | 1 | .... | 2 | 1 | .... | .... | 1 | 2 |
| .... | .... | .... | .... | .... | 1 | .... | .... | 1 | 1 | .... | .... | 1 | 1 | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 3 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 4 | 1 | .... | 1 | 2 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | 2 | 1 | .... | .... | .... | 2 | 1 | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | .... | .... | .... | .... |
| 2 | .... | 2 | 1 | .... | .... | 5 | 3 | 19 | 20 | 2 | 19 | 18 | 38 | 45 | 12 | 11 | 30 | 16 |
| 1 | .... | 1 | .... | .... | 3 | 3 | 6 | 30 | 22 | 1 | 28 | 26 | 52 | 57 | 13 | 14 | 24 | 30 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 7 | 3 | .... | 2 | .... | 3 | 10 | .... | 2 | 3 | 4 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 1 | .... | 1 | 1 | 3 | 2 | .... | 2 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | 1 | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | 3 | 2 | 2 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | 1 | .... | .... | 2 | .... | 3 | .... | 1 | 1 | .... |
| 1 | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 2 | 4 | 1 | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 2 | .... | 1 | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | 1 | 3 | 2 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 2 | 2 | 2 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 1 | .... | 3 | .... | .... | .... | .... | 2 | .... | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | 1 |
| .... | .... | 1 | .... | .... | 2 | 2 | 3 | 15 | 14 | 1 | 18 | 16 | 30 | 31 | 9 | 7 | 18 | 17 |
| .... | 2 | 5 | 2 | 1 | 4 | 35 | 32 | 113 | 93 | 8 | 61 | 75 | 112 | 117 | 55 | 70 | 47 | 109 |
| .... | 1 | 5 | 2 | 1 | 1 | 21 | 20 | 62 | 41 | 5 | 18 | 38 | 41 | 40 | 24 | 35 | 16 | 46 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... | .... | .... | .... | 3 | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | 1 | 1 | .... | .... | .... | 1 | .... |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years. | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths form all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*) | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 8 | ..... | 3 | 37.5 | 1 | ..... | .... | .... |
| LOCKPORT | 16,581 | 23 | ..... | 4 | 25.0 | 3 | 62 | .... | .... |
| NIAGARA FALLS | 19,457 | 19 | 12.0 | 4 | 21.0 | 4 | 100 | .... | 1 |
| *Medina* | 4,716 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| *Albion* | 4,477 | 6 | ..... | 1 | 16.6 | 0 | ..... | .... | .... |
| *Brockport* | 3,400 | 11 | ..... | 1 | 9.0 | 3 | 90 | .... | 1 |
| ROCHESTER | 162,608 | 192 | 14 5 | 23 | 12.5 | 34 | 65 | .... | 6 |
| Palmyra | 3,758 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Newark* | 4,578 | 6 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Lyons | 5,824 | 5 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Clyde* | 2,507 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| OSWEGO | 22,200 | 23 | ..... | 6 | ..... | 6 | ..... | .... | .... |
| *Fulton* | 5,281 | 9 | ..... | 4 | ..... | 0 | ..... | .... | .... |
| Richland | 3,535 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Rest of district | 247,000 | 214 | 10.5 | 39 | 18.2 | 75 | 100 | 2 | 4 |
| Totals for the state | 7,268,000 | 9,309 | 15.5 | 2,097 | 22.6 | 1,668 | 110 | 26 | 147 |
| Average for past 5 years | ..... | 8,449 | 15.1 | 2,110 | 25.0 | ..... | 105 | 34 | 175 |

**SMALLPOX IN THE STATE**—Smallpox has materially decreased since summer, causing 10 deaths in September, 11 in October and 9 this month, 6 of the 30 deaths occurring outside New York city, 3 in Marlborough, 1 each in Ramapo, Buffalo and Lockport. During this time it has existed at Syracuse and vicinity; Rochester (3), Buffalo, Lockport, Olean and Little Valley; Utica (1), Schenectady, Watertown, Dickinson, St. Regis

FOR NOVEMBER—(*Concluded*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... | 1 | 1 | .... | .... | 3 |
| .... | 1 | .... | .... | .... | .... | 1 | .... | 3 | 3 | .... | 3 | 1 | .... | 1 | 1 | 5 | 1 | 3 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 4 | 3 | 1 | .... | 1 | 2 | 3 | .... | 1 | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 2 | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 1 | .... | 1 | 3 | 1 | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | 1 | 3 | 2 | 19 | 23 | 1 | 16 | 10 | 30 | 26 | 12 | 11 | 11 | 21 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 2 | 1 | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 3 | 3 | .... | 4 | .... | 3 | 4 | 3 | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | 3 | 1 | .... | .... | .... | .... | 1 | 1 | 2 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | 2 | 7 | 7 | 15 | 17 | 1 | 13 | 15 | 30 | 35 | 12 | 12 | 15 | 27 |
| 23 | 9 | 81 | 49 | 6 | 39 | 331 | 300 | 1,203 | 1,063 | 74 | 537 | 841 | 1,002 | 1,000 | 410 | 478 | 364 | 1,326 |
| 26 | .... | 46 | 46 | 17 | 44 | 325 | 170 | 1,214 | 988 | 65 | 618 | 687 | 843 | 896 | 356 | 440 | 407 | 1,053 |

Falls, Santa Clara and Lafargeville; Plattsburgh and Glens Falls; Elmira, Middletown and Binghamton; South Lima, Newburgh, White Plains. At this time, the end of December, it prevails at Buffalo, Watertown (3), Dickinson (1), Lafargeville (1), Middletown, Binghamton and Newburgh, each 1 case.

MONTHLY BULLETIN OF THE NEW

*Abstract of deaths and their causes in the following*

[Cities are printed in SMALL CAPITALS,

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| MARITIME DISTRICT Totals | 3,852,922 | 6,093 | 18.5 | 1,870 | 30.5 | 649 | 117 | 21 | 77 |
| CITY OF NEW YORK Totals | 3,536,517 | 5,659 | 18.8 | 1,778 | 31.5 | 554 | 120 | 20 | 71 |
| BOROUGH OF MANHATTAN | 1,873,562 | 3,206 | 20 0 | 1,117 | 35.0 | 268 | 119 | 14 | 37 |
| BOROUGH OF THE BRONX | 222,124 | 424 | 23.0 | 111 | 26.2 | 60 | 184 | .... | 2 |
| BOROUGH OF BROOKLYN | 1,209,064 | 1,754 | 17.0 | 485 | 27.5 | 182 | 116 | 6 | 31 |
| BOROUGH OF QUEENS | 162,834 | 183 | 13.4 | 50 | 27.5 | 21 | 110 | .... | .... |
| BOROUGH OF RICHMOND | 68,933 | 92 | 16.0 | 15 | 16.5 | 23 | 75 | .... | 1 |
| Oyster Bay | 16,334 | 8 | ..... | 1 | 12.5 | 2 | ..... | .... | .... |
| Hempstead | 27,066 | 36 | ..... | 11 | 31.0 | 7 | 150 | .... | .... |
| North Hempstead | 12,048 | 19 | ..... | 5 | 25.5 | 3 | 100 | .... | .... |
| Southold | 8,301 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Sag Harbor* | 2,000 | 3 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Huntington | 9,483 | 7 | ..... | 1 | ..... | 2 | ..... | .... | 1 |
| Brookhaven | 14,592 | 23 | ..... | 4 | 18.0 | 7 | 125 | .... | .... |
| YONKERS | 47,931 | 64 | 14.0 | 22 | 34.5 | 12 | 93 | .... | 2 |
| Greenburgh | 15,564 | 19 | ..... | 2 | 10.5 | 6 | 105 | 1 | .... |
| MOUNT VERNON | 20,346 | 26 | ..... | 6 | 23.0 | 5 | 40 | .... | .... |
| *Port Chester* | 7,440 | 13 | ..... | 4 | 30.4 | 0 | 150 | .... | .... |
| *Ossining* | 7,939 | 12 | ..... | 1 | 8.3 | 3 | 88 | .... | .... |
| NEW ROCHELLE | 14,720 | 22 | ..... | 5 | 22.7 | 3 | 90 | .... | 2 |
| *Peekskill* | 10,358 | 14 | ..... | 5 | 35.7 | 2 | 285 | .... | .... |
| *White Plains* | 7,900 | 20 | ..... | 4 | 20.0 | 4 | 50 | .... | .... |
| Rest of district | 85,000 | 146 | 20.0 | 20 | 14.0 | 39 | 27 | .... | 1 |
| HUDSON VALLEY DISTRICT Totals | 690,143 | 974 | 16.5 | 162 | 16.5 | 241 | 88 | 3 | 20 |
| ALBANY | 94,151 | 138 | 17.3 | 14 | 10.0 | 23 | 50 | .... | 1 |
| COHOES | 24,000 | 40 | 20.0 | 17 | 42.5 | 4 | 50 | .... | 1 |
| TROY | 75,057 | 119 | 18.4 | 15 | 12.5 | 19 | 50 | .... | 2 |
| WATERVLIET | 14,321 | 20 | ..... | 2 | 10 0 | 6 | 200 | .... | .... |
| *Green Island* | 4,770 | 1 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Hoosick Falls* | 5,671 | 9 | ..... | 1 | 11.1 | 3 | 333 | .... | .... |
| RENSSELAER | 7,466 | 14 | ..... | 6 | 42.8 | 2 | 142 | .... | .... |
| Coxsackie | 4,102 | 4 | ..... | 1 | 25.0 | 1 | 250 | 1 | .... |
| *Catskill* | 5,486 | 8 | ..... | 1 | 12 5 | 2 | 125 | .... | .... |
| HUDSON | 9,528 | 17 | ..... | 2 | 12.0 | 4 | 60 | .... | .... |
| KINGSTON | 24,535 | 35 | 17.0 | 4 | 11.5 | 6 | ..... | .... | .... |
| *Ellenville* | 3,000 | 7 | ..... | 1 | 14.5 | 4 | 145 | .... | 1 |
| Marbletown | 3,511 | 6 | ..... | 2 | 33.3 | 0 | ..... | .... | .... |
| Rosendale | 6,278 | 10 | ..... | 1 | 10.0 | 0 | 100 | .... | .... |
| Esopus | 4,907 | 12 | ..... | 3 | 25.0 | 1 | 87 | .... | .... |
| *Saugerties* | 3,700 | 6 | ..... | 0 | ..... | 1 | 333 | .... | 1 |
| POUGHKEEPSIE | 24,029 | 42 | 20.5 | 12 | 28.5 | 7 | 142 | .... | .... |
| Fishkill | 13,016 | 19 | ..... | 6 | 31.5 | 6 | 100 | .... | .... |
| *Wappingers Falls* | 3,504 | 9 | ..... | 1 | 11.1 | 3 | 333 | .... | .... |
| NEWBURGH | 25,000 | 48 | 24.0 | 9 | 18.7 | 10 | 145 | .... | .... |
| *Port Jervis* | 9,385 | 15 | ..... | 0 | ..... | 6 | ..... | .... | .... |
| MIDDLETOWN | 14,522 | 15 | ..... | 0 | ..... | 4 | 67 | .... | 1 |
| Warwick | 6,403 | 2 | ..... | 1 | ..... | 1 | ..... | .... | .... |
| Goshen | 4,564 | 6 | ..... | 2 | 33.3 | 1 | 333 | .... | .... |

## YORK STATE DEPARTMENT OF HEALTH

***districts, cities, villages and towns during December*, 1901**

**villages in *italic* and towns in roman type]**

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| 21 | 11 | 54 | 110 | 17 | 29 | 219 | 159 | 1,303 | 650 | 61 | 271 | 550 | 552 | 542 | 247 | 278 | 110 | 811 |
| 19 | 11 | 54 | 105 | 14 | 28 | 209 | 152 | 1,233 | 606 | 56 | 247 | 518 | 509 | 468 | 227 | 261 | 85 | 766 |
| 4 | 1 | 28 | 60 | 12 | 14 | 115 | 95 | 724 | 296 | 33 | 153 | 309 | 290 | 236 | 126 | 146 | 34 | 479 |
| 6 | 9 | 4 | 35 | 1 | 2 | 11 | 8 | 69 | 85 | 2 | 12 | 37 | 26 | 33 | 11 | 17 | 10 | 44 |
| 6 | 1 | 20 | 8 | 1 | 9 | 70 | 46 | 382 | 203 | 18 | 68 | 148 | 163 | 175 | 79 | 78 | 34 | 208 |
| 3 | .... | .... | 1 | .... | 3 | 16 | 3 | 39 | 11 | 2 | 10 | 20 | 18 | 11 | 4 | 15 | 3 | 30 |
| .... | .... | 2 | 1 | .... | .... | 3 | .... | 19 | 11 | 1 | 4 | 4 | 12 | 13 | 7 | 5 | 4 | 5 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 2 | .... | 3 | .... | .... | 1 | 1 |
| .... | .... | .... | 2 | .... | 1 | 1 | 2 | 8 | 2 | .... | 2 | .... | 2 | 5 | 3 | .... | 2 | 6 |
| .... | .... | .... | 2 | .... | .... | .... | .... | 3 | .... | .... | 1 | 1 | 2 | 4 | 1 | 3 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | .... | .... | .... | 1 | 1 | 2 |
| .... | .... | .... | 1 | .... | .... | 1 | 1 | .... | 3 | .... | 3 | .... | 4 | 3 | 1 | .... | 4 | 2 |
| 1 | .... | .... | .... | 2 | .... | .... | 1 | 12 | 8 | .... | 2 | 7 | 6 | 9 | .... | 2 | 2 | 10 |
| 1 | .... | .... | .... | .... | .... | .... | .... | 4 | 1 | .... | 2 | 3 | 1 | 1 | 1 | 2 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 6 | 1 | .... | 3 | 1 | 4 | 4 | .... | 1 | 1 | 4 |
| .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | .... | 1 | 2 | 2 | 2 | 2 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 4 | .... | .... | 3 | .... | 1 | 2 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 4 |
| .... | .... | .... | .... | 1 | .... | 2 | 1 | 1 | .... | 2 | 2 | 1 | 1 | 2 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 7 | 2 | 2 | 1 | .... | 2 | 1 | 2 | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | 2 | 1 | 20 | 22 | .... | 2 | 11 | 16 | 36 | 9 | 5 | 10 | 11 |
| 2 | 2 | 11 | .... | 2 | 4 | 28 | 13 | 150 | 116 | 5 | 61 | 57 | 125 | 138 | 42 | 50 | 67 | 78 |
| .... | .... | .... | .... | .... | .... | 5 | 1 | 20 | 30 | .... | 6 | 10 | 23 | 16 | 13 | 3 | 6 | 4 |
| .... | .... | 1 | .... | .... | .... | 2 | 2 | 8 | 5 | .... | 1 | 3 | 2 | 7 | .... | .... | 2 | 6 |
| .... | .... | 1 | .... | .... | 1 | 1 | 1 | 25 | 21 | 1 | 8 | 10 | 10 | 15 | 7 | 1 | 6 | 9 |
| .... | .... | .... | .... | .... | .... | 1 | 1 | 3 | 2 | .... | .... | 2 | 2 | 7 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 2 | .... | 3 | 2 | .... | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | 2 | .... | 1 | 1 | .... | 3 | 2 | .... | .... | 2 | .... | .... | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 3 | .... | .... | 1 | 2 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | 1 | .... | .... | .... | .... | 2 | .... | .... | 2 | 3 | 1 | .... | 1 | 3 | 4 |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | 7 | 1 | 3 | 1 | 6 | 2 | 3 | 3 | 2 | 4 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | .... | 1 | 1 | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | 1 | 3 | .... | .... | .... | .... |
| .... | .... | 1 | .... | .... | .... | .... | .... | 3 | .... | .... | .... | .... | 1 | 3 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 4 | .... | .... | 1 | 2 | .... | 2 | .... | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | .... | 1 | .... | .... | .... | .... | 2 |
| .... | .... | 1 | .... | .... | .... | 1 | 2 | 4 | 4 | .... | 2 | 2 | 3 | 10 | 2 | 4 | .... | 5 |
| 1 | .... | .... | .... | .... | .... | 1 | .... | 4 | 1 | .... | .... | .... | 4 | 2 | .... | 1 | 2 | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | 4 | .... | .... | .... | .... | 1 | 1 | 1 | .... | 2 | .... |
| .... | .... | 6 | .... | .... | .... | 1 | .... | 5 | 5 | .... | 3 | 2 | 10 | 6 | 1 | 6 | 2 | 1 |
| .... | 1 | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | 1 | .... | 3 | .... | 1 | 4 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 5 | 1 | .... | .... | 1 | .... | 2 | .... | 2 | 3 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 2 | 2 | .... | .... | .... | 1 | .... | 1 | .... | .... | .... | .... |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| HUDSON VALLEY DIST.—(*Con.*) | | | | | | | | | |
| Montgomery | 5,939 | 7 | ..... | 2 | 28.5 | 1 | 428 | .... | .... |
| Haverstraw | 9,874 | 14 | ..... | 3 | 21.5 | 4 | ..... | .... | .... |
| *Nyack* | 4,275 | 10 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Ramapo | 7,502 | 15 | ..... | 4 | 26 7 | 6 | 65 | .... | .... |
| Rest of district | 271,800 | 226 | 14 0 | 52 | 16.0 | 111 | 96 | 2 | 11 |
| ADIRONDACK AND NORTH'N DISTRICT Totals | 394,772 | 439 | 13.0 | 71 | 16.0 | 138 | 50 | 1 | 8 |
| WATERTOWN | 21,700 | 19 | 11.0 | 4 | 22.0 | 7 | 50 | .... | .... |
| Ellisburgh | 3,888 | 8 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Cape Vincent | 2,882 | 4 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Clayton | 4,313 | 7 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| OGDENSBURGH | 12,633 | 13 | ..... | 3 | 23.0 | 5 | 76 | .... | .... |
| Gouverneur | 6,000 | 4 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| *Potsdam* | 3,843 | 9 | ..... | 1 | 11.1 | 1 | 111 | .... | 1 |
| Canton | 6,387 | 11 | ..... | 2 | 18.2 | 6 | 273 | .... | 1 |
| *Malone* | 5,935 | 11 | ..... | 3 | 27.3 | 1 | 90 | .... | .... |
| *Plattsburgh* | 8,434 | 13 | ..... | 5 | 38.5 | 2 | 75 | .... | .... |
| *Glens Falls* | 12,613 | 21 | ..... | 4 | 19.8 | 7 | 142 | .... | 1 |
| *Whitehall* | 4,377 | 4 | ..... | 1 | 25.0 | 2 | ..... | .... | .... |
| Fort Edward | 5,216 | 4 | ..... | 2 | 50.0 | 0 | 500 | .... | .... |
| *Sandy Hill* | 4,473 | 4 | ..... | 2 | 50.0 | 0 | 250 | .... | .... |
| Granville | 5,217 | 6 | ..... | 1 | 16.7 | 1 | ..... | .... | .... |
| Greenwich | 4,172 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| Lowville | 3,746 | 2 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Rest of district | 278,943 | 293 | 12.2 | 42 | 14.0 | 96 | 63 | 1 | 5 |
| MOHAWK VALLEY DISTRICT Totals | 408,973 | 496 | 14.5 | 87 | 17.2 | 117 | 100 | 2 | 17 |
| SCHENECTADY | 31,682 | 60 | 22.0 | 11 | 18.3 | 8 | 200 | .... | 6 |
| Cobleskill | 3,973 | 1 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| AMSTERDAM | 20,929 | 20 | 12.0 | 7 | 35.0 | 7 | 100 | .... | .... |
| *Fort Plain* | 2,444 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| JOHNSTOWN | 10,130 | 6 | ..... | 3 | 50.0 | 1 | ..... | .... | .... |
| GLOVERSVILLE | 18,349 | 25 | ..... | 2 | 8.0 | 9 | 40 | .... | .... |
| LITTLE FALLS | 10,381 | 7 | ..... | 2 | 28.5 | 2 | ..... | .... | .... |
| *Herkimer* | 5,555 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| *Ilion* | 5,138 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| UTICA | 56,383 | 79 | 16.7 | 14 | 17.7 | 20 | 50 | 1 | .... |
| Whitestown | 6,235 | 4 | ..... | 0 | ..... | 1 | ..... | .... | 1 |
| ROME | 15,343 | 30 | ..... | 3 | 10.0 | 11 | 100 | .... | 1 |
| Boonville | 3,332 | 6 | ..... | 1 | 16.7 | 0 | ..... | .... | .... |
| Camden | 3,745 | 3 | ..... | 1 | 33.3 | 0 | 333 | .... | .... |
| Waterford | 6,157 | 9 | ..... | 2 | 22.2 | 0 | 111 | .... | .... |
| *Mechanicville* | 4,695 | 8 | ..... | 0 | ..... | 2 | 125 | .... | .... |
| *Ballston Spa* | 3,923 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| *Saratoga Springs* | 12,409 | 18 | ..... | 0 | ..... | 6 | ..... | .... | .... |
| Rest of district | 188,170 | 206 | 13.0 | 38 | 12.0 | 66 | 100 | 1 | 9 |
| SOUTHERN TIER DISTRICT Totals | 429,434 | 506 | 14.0 | 65 | 13.0 | 158 | 60 | 1 | 6 |
| BINGHAMTON | 39,647 | 72 | 21.0 | 11 | 15.3 | 13 | 70 | .... | 1 |
| *Owego* | 5,039 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Candor | 3,330 | 3 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Waverly* | 4,465 | 5 | ..... | 0 | ..... | 3 | 400 | .... | .... |
| ELMIRA | 35,672 | 40 | 13.5 | 8 | 20.0 | 11 | 200 | .... | 2 |

FOR DECEMBER—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| | | | | | | | | | | | | | | | | | | |
| .... | .... | .... | .... | .... | .... | 2 | 1 | .... | .... | .... | 3 | .... | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 2 | 1 | 1 | 4 | 1 | 2 | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 4 | .... | .... | .... | 1 | .... | 3 | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | 1 | .... | .... | 3 | 3 | .... | 1 | .... | .... | 1 | 1 | .... | 3 | 2 |
| 1 | 1 | 1 | .... | 1 | 2 | 9 | 3 | 44 | 27 | 3 | 25 | 15 | 48 | 48 | 7 | 17 | 33 | 28 |
| .... | .... | 1 | 2 | 1 | 3 | 10 | 6 | 58 | 47 | 4 | 30 | 27 | 58 | 55 | 18 | 14 | 46 | 50 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 5 | 1 | .... | 1 | 1 | 3 | 1 | .... | 2 | 3 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 1 | .... | 3 | 1 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | 1 | .... | .... | .... | 1 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | .... | .... | 1 | 2 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 5 | 2 | .... | 2 | 1 | .... | .... | .... | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | 2 | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 1 | 5 |
| .... | .... | .... | .... | .... | 2 | .... | .... | .... | 2 | .... | .... | .... | 3 | 1 | .... | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | 3 | 1 | .... | .... | 3 | .... | .... | .... | .... | 3 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 3 | 1 | 1 | 1 | 1 | .... | 1 | 1 | .... | 1 | 2 |
| .... | .... | 1 | .... | .... | .... | 1 | .... | .... | 5 | .... | .... | .... | 5 | 4 | .... | .... | 3 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 2 | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 2 | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 1 | .... | .... | .... | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 2 | 3 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... |
| .... | .... | .... | 2 | 1 | 1 | 3 | 5 | 36 | 26 | 2 | 24 | 23 | 32 | 39 | 16 | 12 | 33 | 32 |
| .... | .... | 2 | .... | 2 | 2 | 14 | 10 | 78 | 42 | 1 | 37 | 42 | 40 | 65 | 23 | 23 | 36 | 60 |
| .... | .... | .... | .... | .... | 1 | 3 | 2 | 11 | 6 | .... | 3 | 1 | 1 | 7 | 5 | 3 | 3 | 8 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | 1 | .... | 1 | .... | 4 | .... | .... | .... | 3 | .... | 3 | .... | .... | .... | 7 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | 1 | .... | 1 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 2 | 1 | .... | 3 | 2 | 5 | 4 | 2 | 1 | .... | 4 |
| .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 | 1 | .... | .... | .... | 1 | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 2 | .... | 1 | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | 2 | 13 | 14 | .... | 3 | 6 | 6 | 12 | 2 | 6 | 3 | 10 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... |
| .... | .... | 1 | .... | .... | .... | 1 | .... | 5 | 3 | .... | 2 | .... | 7 | 6 | .... | 2 | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | .... | 2 | 1 | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | 1 | 4 | .... | .... | 1 | 1 | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | 1 | .... | 3 | 1 | .... | .... | .... | .... | .... | 1 | .... | 2 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | 1 | .... | 1 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | 4 | .... | .... | 3 | 5 | .... | 3 | .... | .... | 1 | .... |
| .... | .... | 1 | .... | 1 | 1 | 6 | 4 | 30 | 12 | 1 | 19 | 18 | 19 | 24 | 8 | 9 | 23 | 20 |
| .... | .... | 2 | 5 | 2 | 2 | 9 | 4 | 85 | 28 | 2 | 38 | 29 | 68 | 72 | 26 | 35 | 42 | 50 |
| .... | .... | 1 | .... | .... | 1 | 2 | .... | 15 | 3 | 1 | 7 | 5 | 7 | 7 | 3 | 8 | 2 | 9 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | 1 | 1 | .... | 1 | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... |
| .... | .... | .... | .... | 2 | .... | .... | .... | 1 | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | 6 | .... | 5 | 1 | .... | 4 | 3 | 5 | 3 | 4 | 1 | 3 | 3 |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| HORNELLSVILLE | 12,000 | 13 | ..... | 3 | 23.0 | 1 | 75 | .... | .... |
| *Bath* | 5,000 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| CORNING | 11,061 | 11 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Wellsville | 5,000 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| OLEAN | 9,462 | 12 | ..... | 4 | 33.3 | 1 | ..... | .... | .... |
| *Salamanca* | 4,251 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| DUNKIRK | 11,616 | 14 | ..... | 3 | 21.4 | 4 | 142 | .... | .... |
| JAMESTOWN | 22,892 | 21 | ..... | 6 | ..... | 3 | ..... | 1 | 1 |
| *Westfield* | 2,430 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Fredonia* | 4,125 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Rest of district | 248,500 | 287 | 13.5 | 28 | 9.5 | 109 | 35 | .... | 2 |
| EAST CENTRAL DISTRICT Totals | 401,082 | 438 | 13.0 | 53 | 12.3 | 150 | 70 | 2 | 9 |
| SYRACUSE | 108,374 | 107 | 12.0 | 21 | 20.0 | 20 | 78 | .... | 1 |
| *Baldwinsville* | 3,000 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| De Witt | 5,435 | 9 | ..... | 1 | 11.1 | 1 | 111 | .... | 1 |
| CORTLAND | 9,014 | 10 | ..... | 2 | 20.0 | 6 | ..... | .... | .... |
| *Homer* | 2,381 | 7 | ..... | 1 | 14.2 | 3 | 142 | 1 | .... |
| ONEIDA | 7,942 | 8 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Hamilton | 3,744 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Cazenovia | 3,830 | 8 | ..... | 0 | ..... | 5 | ..... | .... | .... |
| Brookfield | 2,726 | 8 | ..... | 1 | 12.5 | 5 | 250 | 1 | .... |
| *Norwich* | 5,766 | 9 | ..... | 0 | ..... | 1 | 111 | .... | .... |
| *Oneonta* | 7,147 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Worcester | 2,409 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Cooperstown* | 2,368 | 2 | ..... | 1 | ..... | 0 | ..... | .... | 1 |
| Walton | 4,869 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Delhi | 3,243 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Liberty | 4,568 | 12 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Rest of district | 225,844 | 239 | 12.0 | 25 | 10.5 | 98 | 75 | .... | 5 |
| WEST CENTRAL DISTRICT Totals | 316,000 | 347 | 12.5 | 36 | 10.7 | 138 | 50 | 1 | 4 |
| AUBURN | 30,345 | 32 | 12.5 | 5 | 15.6 | 4 | 31 | .... | 1 |
| ITHACA | 13,136 | 13 | ..... | 3 | 23.0 | 4 | 75 | .... | .... |
| Hector | 4,137 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Waterloo* | 4,256 | 10 | ..... | 1 | 10.0 | 2 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 7 | ..... | 2 | 33.3 | 2 | ..... | .... | .... |
| GENEVA | 10,433 | 11 | ..... | 3 | 27.3 | 1 | ..... | .... | .... |
| *Canandaigua* | 6,151 | 13 | ..... | 2 | 15.3 | 4 | 230 | .... | 1 |
| Manchester | 4,733 | 8 | ..... | 3 | 37.5 | 2 | ..... | .... | .... |
| Phelps | 4,788 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Penn Yan* | 4,650 | 7 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| *Batavia* | 9,180 | 12 | ..... | 1 | ..... | 5 | ..... | .... | .... |
| *Dansville* | 3,633 | 8 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Le Roy* | 3,144 | 6 | ..... | 1 | 16.7 | 4 | ..... | .... | .... |
| Warsaw | 4,341 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Rest of district | 206,500 | 212 | 12.3 | 15 | 7.0 | 100 | 50 | 1 | 2 |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 879,022 | 1,080 | 14.5 | 228 | 21.0 | 264 | 110 | 7 | 25 |
| BUFFALO | 352,387 | 446 | 15.0 | 132 | 29.4 | 64 | 166 | 2 | 10 |
| TONAWANDA | 7,421 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| *Amherst* | 4,223 | 3 | ..... | 0 | ..... | 0 | 333 | .... | 1 |

FOR DECEMBER—(*Continued*)

| Zymotic Diseases | | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| | | | | | | | | 3 | | | 1 | | | | | | 1 | |
| | | | | | 1 | | | 6 | 2 | | | | 1 | 1 | | | | 2 |
| | | | | | | | | | | | 1 | | | | | 1 | | |
| | | | | | | | | 3 | 1 | | 1 | | 3 | 1 | | 2 | | |
| | | | | | | | | 1 | 1 | | 1 | | | | 1 | 1 | | 1 |
| | | | | | | | | | | | | | 4 | 3 | 1 | 2 | | 2 |
| | | | | | | | | 1 | | | | 2 | | | | 1 | | |
| | | | 2 | | | | | 2 | | | 1 | | 2 | 2 | | 1 | 1 | 3 |
| | | | | | | | 1 | 2 | 5 | 1 | | 2 | 1 | 2 | 1 | | | 4 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | 2 | | | | | | 1 | | 1 | 2 | |
| | | 1 | 3 | | | 1 | 3 | 42 | 15 | | 22 | 17 | 43 | 51 | 15 | 17 | 30 | 25 |
| | 1 | 2 | 1 | 1 | 3 | 10 | 2 | 52 | 39 | 4 | 33 | 38 | 74 | 48 | 26 | 14 | 48 | 31 |
| | | 1 | | 1 | | 4 | 1 | 9 | 14 | 2 | 9 | 9 | 14 | 13 | 7 | 3 | 10 | 9 |
| | | | | | | | | | 1 | | | | | | | | | |
| | | | | | | | | | 2 | | 1 | | | | 1 | 3 | | 1 |
| | | | | | | | | | | | | | 3 | 1 | | | 4 | 2 |
| | | | | | | | | 2 | | | 1 | | | | | | 3 | |
| | | | | | | | | 2 | 2 | | | | 1 | 1 | 1 | | | 1 |
| | | | | | | | | | | | | | 2 | | | | | 1 |
| | | | | | | | | 2 | | | 1 | | 2 | | 1 | | 1 | 1 |
| | | | | | 1 | | | 1 | | | 1 | 1 | 2 | | | | | 1 |
| | | | | | | 1 | | 1 | | | | 1 | 2 | 1 | | | 1 | 2 |
| | | | | | | | | | | | | 1 | | | | 1 | 3 | 1 |
| | | | | | | | | | | | | | 1 | | | | 1 | |
| | | | | | | | | | | | | | | 1 | | | | |
| | | | | | | | | | | | | | 2 | 2 | | 1 | | |
| | | | | | | | | | | | | 1 | | 1 | | | | |
| | | | | | | | | | 9 | | 1 | | | 1 | | | | 1 |
| | 1 | 1 | 1 | | 2 | 5 | 1 | 35 | 11 | 2 | 19 | 25 | 45 | 27 | 16 | 6 | 25 | 11 |
| | | 1 | | | 5 | 1 | 5 | 42 | 25 | 2 | 25 | 32 | 53 | 61 | 14 | 16 | 34 | 26 |
| | | | | | | | | 5 | 7 | | 3 | 1 | 4 | 3 | | | 5 | 3 |
| | | | | | | | 1 | | | | 2 | 2 | 3 | 2 | | | 1 | 2 |
| | | | | | | | | | | | 1 | | 1 | | | | | |
| | | | | | | | | 1 | 1 | | | 1 | 2 | 1 | | 2 | 1 | 1 |
| | | | | | | | | 2 | | | 1 | | 1 | 2 | | | | 1 |
| | | | | | | | | 2 | 1 | 1 | | 2 | | 3 | | | 1 | 1 |
| | | | | | | | 2 | 3 | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 |
| | | | | | | | | 2 | | | 1 | | | | 1 | | | 4 |
| | | | | | | | | | | | | | 1 | | | | | |
| | | | | | | | | | 1 | | 1 | 2 | 2 | 1 | | | | |
| | | | | | 1 | | | 3 | 2 | | | 1 | | 1 | | 1 | 2 | 1 |
| | | | | | | | | | | | 2 | | 3 | 1 | | 1 | 1 | |
| | | | | | | | | 1 | 1 | | 1 | 2 | 1 | | | | | |
| | | | | | | | | 1 | | | | 1 | 1 | 1 | | 1 | | |
| | | 1 | | | 4 | 1 | 2 | 22 | 11 | 1 | 13 | 19 | 33 | 45 | 12 | 11 | 22 | 12 |
| 1 | 1 | 8 | 8 | 5 | 4 | 50 | 14 | 155 | 103 | 15 | 67 | 60 | 133 | 142 | 46 | 61 | 71 | 104 |
| | 1 | 7 | 8 | 2 | 1 | 37 | 6 | 70 | 39 | 9 | 19 | 28 | 43 | 54 | 16 | 32 | 22 | 40 |
| | | | | | | | | | 1 | | 3 | | | | | | | 1 |
| | | | | | | | | 1 | | | | | 1 | | | | | |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHERN TIER DIST.—(*Con.*) | | | | | | | | | |
| Horseheads | 4,944 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| HORNELLSVILLE | 12,000 | 13 | ..... | 3 | 23.0 | 1 | 75 | .... | .... |
| *Bath* | 5,000 | 2 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| CORNING | 11,061 | 11 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Wellsville | 5,000 | 6 | ..... | 1 | 16.7 | 2 | ..... | .... | .... |
| OLEAN | 9,462 | 12 | ..... | 4 | 33.3 | 1 | ..... | .... | .... |
| *Salamanca* | 4,251 | 4 | ..... | 1 | 25.0 | 1 | ..... | .... | .... |
| DUNKIRK | 11,616 | 14 | ..... | 3 | 21.4 | 4 | 142 | .... | .... |
| JAMESTOWN | 22,892 | 21 | ..... | 6 | ..... | 3 | ..... | 1 | 1 |
| *Westfield* | 2,430 | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... |
| *Fredonia* | 4,125 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Rest of district | 248,500 | 287 | 13.5 | 28 | 9.5 | 109 | 35 | .... | 2 |
| EAST CENTRAL DISTRICT Totals | 401,082 | 438 | 13.0 | 53 | 12.3 | 150 | 70 | 2 | 9 |
| SYRACUSE | 108,374 | 107 | 12.0 | 21 | 20.0 | 20 | 78 | .... | 1 |
| *Baldwinsville* | 3,000 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| De Witt | 5,435 | 9 | ..... | 1 | 11.1 | 1 | 111 | .... | 1 |
| CORTLAND | 9,014 | 10 | ..... | 2 | 20.0 | 6 | ..... | .... | .... |
| *Homer* | 2,381 | 7 | ..... | 1 | 14.2 | 3 | 142 | 1 | .... |
| ONEIDA | 7,942 | 8 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Hamilton | 3,744 | 3 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| Cazenovia | 3,830 | 8 | ..... | 0 | ..... | 5 | ..... | .... | .... |
| Brookfield | 2,726 | 8 | ..... | 1 | 12.5 | 5 | 250 | 1 | .... |
| *Norwich* | 5,766 | 9 | ..... | 0 | ..... | 1 | 111 | .... | .... |
| *Oneonta* | 7,147 | 6 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| Worcester | 2,409 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Cooperstown* | 2,368 | 2 | ..... | 1 | ..... | 0 | ..... | .... | 1 |
| Walton | 4,869 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Delhi | 3,243 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Liberty | 4,568 | 12 | ..... | 1 | ..... | 0 | ..... | .... | .... |
| Rest of district | 225,844 | 239 | 12.0 | 25 | 10.5 | 98 | 75 | .... | 6 |
| WEST CENTRAL DISTRICT Totals | 316,000 | 347 | 12.5 | 36 | 10.7 | 138 | 50 | 1 | 4 |
| AUBURN | 30,345 | 32 | 12 5 | 5 | 15.6 | 4 | 31 | .... | 1 |
| ITHACA | 13,136 | 13 | ..... | 3 | 23.0 | 4 | 75 | .... | .... |
| Hector | 4,137 | 2 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| *Waterloo* | 4,256 | 10 | ..... | 1 | 10.0 | 2 | ..... | .... | .... |
| *Seneca Falls* | 6,519 | 7 | ..... | 2 | 33.3 | 2 | ..... | .... | .... |
| GENEVA | 10,433 | 11 | ..... | 3 | 27.3 | 1 | ..... | .... | .... |
| *Canandaigua* | 6,151 | 13 | ..... | 2 | 15.3 | 4 | 230 | .... | 1 |
| Manchester | 4,733 | 8 | ..... | 3 | 37.5 | 2 | ..... | .... | .... |
| Phelps | 4,788 | 1 | ..... | 0 | ..... | 0 | ..... | .... | .... |
| *Penn Yan* | 4,650 | 7 | ..... | 0 | ..... | 4 | ..... | .... | .... |
| *Batavia* | 9,180 | 12 | ..... | 1 | ..... | 5 | ..... | .... | .... |
| *Dansville* | 3,633 | 8 | ..... | 0 | ..... | 3 | ..... | .... | .... |
| *Le Roy* | 3,144 | 6 | ..... | 1 | 16.7 | 4 | ..... | .... | .... |
| Warsaw | 4,341 | 5 | ..... | 0 | ..... | 1 | ..... | .... | .... |
| Rest of district | 206,500 | 212 | 12.3 | 15 | 7.0 | 100 | 50 | 1 | 2 |
| LAKE ONTARIO AND WESTERN DISTRICT Totals | 879,022 | 1,080 | 14.5 | 228 | 21.0 | 264 | 110 | 7 | 25 |
| BUFFALO | 352,387 | 446 | 15.0 | 132 | 29.4 | 64 | 166 | 2 | 10 |
| TONAWANDA | 7,421 | 5 | ..... | 1 | 20.0 | 1 | ..... | .... | .... |
| *Amherst* | 4,223 | 3 | ..... | 0 | ..... | 0 | 333 | .... | 1 |

OR DECEMBER—(*Continued*)

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| | | | | | | | 3 | | | 1 | | | | | | 1 | |
| | | | | 1 | | | 6 | 2 | | | | 1 | 1 | | | | 2 |
| | | | | | | | | | | 1 | | | | | 1 | | |
| | | | | | | | 3 | 1 | | 1 | | 3 | 1 | | 2 | | |
| | | | | | | | 1 | 1 | | 1 | | | | 1 | 1 | | 1 |
| | | | | | | | | | | | | 4 | 3 | 1 | 2 | | 2 |
| | | | | | | | 1 | | | | 2 | | | | 1 | | |
| | | 2 | | | | | 2 | | | 1 | | 2 | 2 | | 1 | 1 | 3 |
| | | | | | | 1 | 2 | 5 | 1 | | 2 | 1 | 2 | 1 | | | 4 |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | 2 | | | | | | 1 | | 1 | 2 | |
| | 1 | 3 | | | 1 | 3 | 42 | 15 | | 22 | 17 | 43 | 51 | 15 | 17 | 30 | 25 |
| 1 | 2 | 1 | 1 | 3 | 10 | 2 | 52 | 39 | 4 | 33 | 38 | 74 | 48 | 26 | 14 | 48 | 31 |
| | 1 | | 1 | | 4 | 1 | 9 | 14 | 2 | 9 | 9 | 14 | 13 | 7 | 3 | 10 | 9 |
| | | | | | | | | 1 | | | | | | | | | |
| | | | | | | | | 2 | | 1 | | | | 1 | 3 | | 1 |
| | | | | | | | | | | | | 3 | 1 | | | 4 | 2 |
| | | | | | | | 2 | | | 1 | | | | | | 3 | |
| | | | | | | | 2 | 2 | | | | 1 | 1 | 1 | | | 1 |
| | | | | | | | | | | | | 2 | | | | | 1 |
| | | | | | | | 2 | | | 1 | | 2 | | 1 | | 1 | 1 |
| | | | | 1 | | | 1 | | | 1 | 1 | 2 | | | | | 1 |
| | | | | | 1 | | 1 | | | | 1 | 2 | 1 | | | 1 | 2 |
| | | | | | | | | | | | 1 | | | | 1 | 3 | 1 |
| | | | | | | | | | | | | 1 | | | | 1 | |
| | | | | | | | | | | | | | 1 | | | | |
| | | | | | | | | | | | | 2 | 2 | | 1 | | |
| | | | | | | | | | | | 1 | | 1 | | | | |
| | | | | | | | | 9 | | 1 | | | 1 | | | | 1 |
| 1 | 1 | 1 | | 2 | 5 | 1 | 35 | 11 | 2 | 19 | 25 | 45 | 27 | 16 | 6 | 25 | 11 |
| | 1 | | | 5 | 1 | 5 | 42 | 25 | 2 | 25 | 32 | 53 | 61 | 14 | 16 | 34 | 26 |
| | | | | | | | 5 | 7 | | 3 | 1 | 4 | 3 | | | 5 | 3 |
| | | | | | | 1 | | | | 2 | 2 | 3 | 2 | | | 1 | 2 |
| | | | | | | | | | | 1 | | 1 | | | | | |
| | | | | | | | 1 | 1 | | | 1 | 2 | 1 | | 2 | 1 | 1 |
| | | | | | | | 2 | | | 1 | | 1 | 2 | | | | 1 |
| | | | | | | | 2 | 1 | 1 | | 2 | | 3 | | | 1 | 1 |
| | | | | | | 2 | 3 | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 |
| | | | | | | | 2 | | | 1 | | | | 1 | | | 4 |
| | | | | | | | | | | | | 1 | | | | | |
| | | | | | | | | 1 | | 1 | 2 | 2 | 1 | | | | |
| | | | | 1 | | | 3 | 2 | | | 1 | | 1 | | 1 | 2 | 1 |
| | | | | | | | | | | 2 | | 3 | 1 | | 1 | 1 | |
| | | | | | | | 1 | 1 | | 1 | 2 | 1 | | | | | |
| | | | | | | | 1 | | | | 1 | 1 | 1 | | 1 | | |
| | 1 | | | 4 | 1 | 2 | 22 | 11 | 1 | 13 | 19 | 33 | 45 | 12 | 11 | 22 | 12 |
| 1 | 1 | 8 | 8 | 5 | 4 | 50 | 14 | 155 | 103 | 15 | 67 | 60 | 133 | 142 | 46 | 61 | 71 | 104 |
| | 1 | 7 | 8 | 2 | 1 | 37 | 6 | 70 | 39 | 9 | 19 | 28 | 43 | 54 | 16 | 32 | 22 | 40 |
| | | | | | | | | | 1 | | 3 | | | | | | | 1 |
| | | | | | | | 1 | | | | | | 1 | | | | |

| SANITARY DISTRICTS | Estimated population | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years and over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|
| LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*) | | | | | | | | | |
| NORTH TONAWANDA | 9,069 | 9 | ..... | 2 | 22.2 | 2 | 111 | .... | .... |
| LOCKPORT | 16,581 | 20 | ..... | 5 | ..... | 5 | ..... | .... | .... |
| NIAGARA FALLS | 19,457 | 34 | 19.5 | 11 | 33.0 | 6 | 145 | .... | 2 |
| *Medina* | 4,716 | 7 | ..... | 0 | ..... | 3 | ..... | .... | 1 |
| *Albion* | 4,477 | 9 | ..... | 0 | ..... | 3 | 111 | .... | .... |
| *Brockport* | 3,400 | 6 | ..... | 1 | 16.7 | 4 | ..... | .... | .... |
| ROCHESTER | 162,608 | 205 | 15.2 | 29 | 14.1 | 40 | 65 | 3 | 4 |
| Palmyra | 3,758 | 8 | ..... | 2 | 25.0 | 3 | ..... | .... | .... |
| *Newark* | 4,578 | 4 | ..... | 1 | ..... | 2 | ..... | .... | .... |
| Lyons | 5,824 | 9 | ..... | 2 | 22.2 | 2 | 111 | .... | .... |
| *Clyde* | 2,507 | 2 | ..... | 1 | 50.0 | 1 | ..... | .... | .... |
| OSWEGO | 22,200 | 18 | ..... | 5 | 27.7 | 1 | ..... | .... | .... |
| *Fulton* | 5,281 | 6 | ..... | 2 | 33.3 | 0 | 167 | .... | 1 |
| Richland | 3,535 | 5 | ..... | 0 | ..... | 2 | ..... | .... | .... |
| Rest of district | 247,000 | 284 | 13.5 | 34 | 12.0 | 125 | 70 | 2 | 6 |
| Totals for the state | 7,268,000 | 10,373 | 16.7 | 2,579 | 24.8 | 1,855 | 104 | 38 | 166 |
| Average for past 5 years | ..... | 9,768 | 17.0 | 2,316 | 23.8 | ..... | 95 | 33 | 172 |

DECEMBER—(*Concluded*)

| Zymotic Diseases | | | | | | | Other Causes of Death | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
| .... | .... | .... | .... | .... | .... | 1 | 3 | .... | 1 | .... | 2 | 1 | .... | .... | 1 | .... | 1 |
| .... | .... | .... | .... | .... | 1 | 1 | 3 | 2 | .... | 1 | 1 | 2 | 2 | .... | .... | 2 | 4 |
| .... | .... | .... | .... | .... | 1 | 2 | 1 | 3 | .... | 5 | 1 | 2 | 3 | 1 | 4 | 2 | 7 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | 1 | 2 | .... | .... | 1 | 1 | .... |
| .... | .... | .... | .... | .... | .... | 1 | 1 | 2 | .... | .... | .... | 1 | 3 | .... | 1 | .... | .... |
| .... | .... | .... | .... | .... | .... | .... | 1 | .... | 3 | .... | 1 | .... | 2 | 1 | .... | 1 | .... |
| .... | .... | .... | 2 | 1 | .... | 2 | 27 | 28 | .... | 12 | 12 | 33 | 26 | 11 | 11 | 12 | 16 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | 4 | .... | .... | .... | 3 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | 1 | .... | .... | .... | .... | 1 |
| .... | .... | .... | .... | 1 | .... | .... | 3 | .... | .... | 1 | .... | 1 | 2 | .... | .... | 1 | .... |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2 |
| .... | .... | .... | .... | .... | .... | .... | 5 | 1 | .... | 3 | .... | 2 | 1 | .... | 1 | 1 | 4 |
| .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | 3 | .... | .... | .... | 1 |
| .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | 1 | .... | 2 | 1 |
| .... | 1 | .... | 1 | 1 | 11 | 1 | 40 | 24 | 2 | 21 | 14 | 42 | 42 | 16 | 10 | 27 | 23 |
| 15 | 81 | 126 | 30 | 52 | 341 | 213 | 1,923 | 1,050 | 94 | 562 | 835 | 1,103 | 1,123 | 442 | 491 | 454 | 1,210 |
| 2 | 67 | 65 | 23 | 57 | 358 | 129 | 1,725 | 1,095 | 72 | 650 | 756 | 971 | 1,056 | 374 | 464 | 479 | 1,197 |

## RELATIVE AREA, DENSITY OF POPULATION AND DEATH RATES IN THE SANITARY DISTRICTS FOR THE YEAR 1901

| DISTRICTS | Area in square miles | Population per square mile | Urban death rate* | Rural death rate† | Total death rate | Percentage of Deaths: Under 5 years of age | Percentage of Deaths: At 70 years of age and over | Percentage of Deaths: From zymotic diseases | In Each 1000 Deaths From all Causes There Were From – Typhoid fever | Scarlet fever | Diphtheria and croup | Diarrheal diseases | Consumption | Acute respiratory diseases |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maritime | 2,286 | 1,685 | 20.0 | 20.0 | 20.0 | 33.5 | 19.3 | 17.0 | 10 | 15 | 28 | 93 | 115 | 145 |
| Hudson valley | 5,872 | 118 | 19.5 | 15.5 | 17.5 | 20.0 | 23.0 | 10.0 | 20 | 7 | 20 | 40 | 113 | 130 |
| Adirondack and Northern | 15,080 | 26 | 16.0 | 12.0 | 14.0 | 20.5 | 28.0 | 11.5 | 17 | 6 | 17 | 41 | 110 | 125 |
| Mohawk valley | 4,731 | 86 | 18.0 | 14.0 | 16.0 | 18.5 | 27.0 | 10.5 | 17 | 4 | 22 | 41 | 93 | 137 |
| Southern tier | 6,545 | 65 | 16.5 | 12.0 | 14.0 | 16.0 | 30.0 | 8.8 | 18 | 3 | 13 | 30 | 75 | 120 |
| East central | 6,555 | 62 | 14.0 | 14.5 | 14.5 | 15.5 | 31.0 | 9.0 | 18 | 5 | 11 | 31 | 96 | 112 |
| West central | 4,746 | 67 | 14.0 | 14.5 | 14.3 | 13.6 | 36.0 | 6.3 | 13 | 2 | 6 | 28 | 80 | 115 |
| Lake Ontario and Western | 4,378 | 200 | 15.5 | 14.5 | 15.0 | 22.5 | 21.0 | 12.5 | 20 | 4 | 18 | 60 | 90 | 125 |
| Entire state | 50,200 | 145 | 19.2 | 17.0 | 17.8 | 28.0 | 17.2 | 14.5 | 13 | 11 | 23 | 72 | 106 | 135 |

* Namely in cities of 20,000 population and over. † In towns and places of less than 20,000 population.

# SUMMARY OF MORTALITY OF THE STATE OF NEW YORK FOR THE YEAR 1901, AS PUBLISHED IN THE MONTHLY BULLETIN

## TOTALS OF MORTALITY OF THE STATE BY MONTHS

| 1901 | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years or over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January | 12,524 | 20.0 | 2,557 | 20.5 | 2,570 | 84 | 38 | 192 | 14 | 10 | 108 | 59 | 35 | 56 |
| February | 11,022 | 19.5 | 2,482 | 22.6 | 2,585 | 86 | 41 | 114 | 11 | 35 | 126 | 74 | 54 | 52 |
| March | 11,913 | 19.2 | 3,070 | 25.8 | 2,167 | 94 | 61 | 111 | 6 | 39 | 200 | 100 | 50 | 57 |
| April | 11,035 | 18.4 | 2,892 | 26.2 | 1,900 | 107 | 59 | 120 | 16 | 42 | 219 | 109 | 62 | 78 |
| May | 10,327 | 16.6 | 2,630 | 25.4 | 1,750 | 112 | 43 | 96 | 15 | 67 | 226 | 95 | 44 | 69 |
| June | 9,500 | 16.0 | 2,500 | 26.3 | 1,476 | 133 | 42 | 83 | 27 | 74 | 165 | 95 | 27 | 54 |
| July | 12,248 | 19.8 | 4,344 | 35.5 | 1,707 | 236 | 51 | 99 | 24 | 89 | 105 | 78 | 17 | 71 |
| August | 10,999 | 17.7 | 4,389 | 40.0 | 1,419 | 285 | 43 | 168 | 36 | 40 | 49 | 40 | 9 | 80 |
| September | 10,269 | 17.2 | 3,668 | 35.7 | 1,490 | 283 | 25 | 210 | 47 | 11 | 32 | 14 | 14 | 60 |
| October | 9,788 | 16.0 | 2,627 | 27.0 | 1,646 | 150 | 25 | 235 | 40 | 14 | 38 | 20 | 17 | 53 |
| November | 9,309 | 15.5 | 2,097 | 22.6 | 1,668 | 110 | 26 | 147 | 23 | 9 | 81 | 49 | 6 | 39 |
| December | 10,373 | 16.7 | 2,579 | 24.8 | 1,855 | 104 | 38 | 166 | 24 | 15 | 81 | 126 | 30 | 52 |
| Total for the year | 129,257 | 17.8 | 35,775 | 28.0 | 22,233 | 145 | 492 | 1,741 | 283 | 445 | 1,430 | 859 | 363 | 721 |
| Average for five years past | 121,665 | 18.0 | 37,340 | 30.7 | ..... | 140 | 596 | 1,655 | 363 | 14 | 774 | 1,085 | 331 | 990 |
| Totals for 1900 | 128,468 | 17.8 | 39,204 | 30.5 | ..... | 137 | 531 | 1,948 | 309 | 14 | 689 | 1,333 | 466 | 1,020 |

## TOTALS OF MORTALITY OF THE STATE BY MONTHS—(*Concluded*)

| 1901 | Croup and diphtheria | Diarrheal diseases | Acute respiratory diseases | Consumption | Puerperal diseases | Diseases of digestive system (not diarrheal) | Diseases of urinary system | Diseases of circulatory system | Diseases of nervous system | Cancer | Accidents and violence | Old age | Unclassified |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January | 345 | 196 | 2,770 | 1,326 | 98 | 629 | 877 | 1,114 | 1,223 | 440 | 544 | 648 | 1,804 |
| February | 240 | 200 | 2,292 | 1,130 | 114 | 614 | 832 | 1,095 | 1,135 | 371 | 403 | 603 | 1,486 |
| March | 277 | 215 | 2,522 | 1,293 | 122 | 644 | 884 | 1,116 | 1,324 | 409 | 409 | 532 | 1,542 |
| April | 273 | 200 | 1,899 | 1,296 | 101 | 613 | 867 | 1,058 | 1,268 | 423 | 481 | 447 | 1,404 |
| May | 263 | 236 | 1,406 | 1,224 | 92 | 649 | 759 | 1,114 | 1,195 | 434 | 590 | 415 | 1,285 |
| June | 246 | 450 | 965 | 1,111 | 97 | 596 | 751 | 957 | 981 | 418 | 723 | 379 | 1,259 |
| July | 125 | 2,231 | 602 | 1,062 | 78 | 609 | 776 | 821 | 1,175 | 434 | 2,020 | 409 | 1,372 |
| August | 142 | 2,555 | 509 | 1,078 | 81 | 693 | 629 | 831 | 993 | 411 | 683 | 361 | 1,568 |
| September | 183 | 1,808 | 582 | 1,021 | 58 | 673 | 705 | 815 | 958 | 417 | 577 | 402 | 1,657 |
| October | 260 | 733 | 916 | 1,112 | 59 | 659 | 792 | 923 | 991 | 424 | 527 | 425 | 1,475 |
| November | 331 | 300 | 1,203 | 1,063 | 74 | 537 | 841 | 1,002 | 1,000 | 410 | 478 | 364 | 1,326 |
| December | 341 | 213 | 1,923 | 1,050 | 94 | 562 | 835 | 1,103 | 1,123 | 442 | 491 | 454 | 1,210 |
| Totals for the year | 3,026 | 9,337 | 17,589 | 13,766 | 1,068 | 7,478 | 9,558 | 11,949 | 13,366 | 5,033 | 7,926 | 5,439 | 17,388 |
| Average for five years past | 3,524 | 8,010 | 17,259 | 13,144 | 980 | 9,660 | 8,520 | 10,609 | 12,675 | 4,296 | 6,439 | 5,574 | 15,172 |
| Totals for 1900 | 3,306 | 7,959 | 19,232 | 13,590 | 1,136 | 10,644 | 9,501 | 10,676 | 12,993 | 4,871 | 6,714 | 5,402 | 16,134 |

## TOTALS OF MORTALITY IN THE SANITARY DISTRICTS FOR THE YEAR 1901

| DISTRICTS | Total number of deaths | Representing annual death rate per 1,000 population of— | Deaths under five years | Percentage of deaths under five years to total deaths | Deaths at 70 years or over | Zymotic deaths per 1,000 deaths from all causes | Cerebro-spinal meningitis | Typhoid fever | Malarial diseases | Smallpox | Scarlet fever | Measles | Erysipelas | Whooping cough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maritime | 76,080 | 20.0 | 25,649 | 33.5 | 7,812 | 170 | 257 | 775 | 222 | 426 | 1,178 | 469 | 208 | 334 |
| Hudson valley | 11,926 | 17.5 | 2,309 | 20.0 | 2,744 | 100 | 43 | 238 | 32 | 6 | 79 | 56 | 25 | 49 |
| Adirondack and Northern | 5,611 | 14.0 | 1,155 | 20.5 | 1,582 | 115 | 31 | 97 | 3 | 4 | 35 | 83 | 22 | 36 |
| Mohawk valley | 6,455 | 16.0 | 1,195 | 18.5 | 1,737 | 105 | 28 | 110 | 4 | 4 | 25 | 49 | 25 | 37 |
| Southern tier | 5,982 | 14.0 | 951 | 16.0 | 1,784 | 88 | 21 | 107 | 5 | ..... | 19 | 33 | 19 | 67 |
| East central | 5,801 | 14.5 | 894 | 15.5 | 1,821 | 90 | 21 | 104 | 4 | 2 | 27 | 75 | 14 | 29 |
| West central | 4,577 | 14.3 | 624 | 13.6 | 1,646 | 63 | 10 | 60 | 6 | ..... | 10 | 29 | 12 | 46 |
| Lake Ontario and Western | 12,875 | 15.0 | 2,983 | 22.5 | 3,098 | 125 | 81 | 250 | 4 | 3 | 57 | 65 | 38 | 123 |